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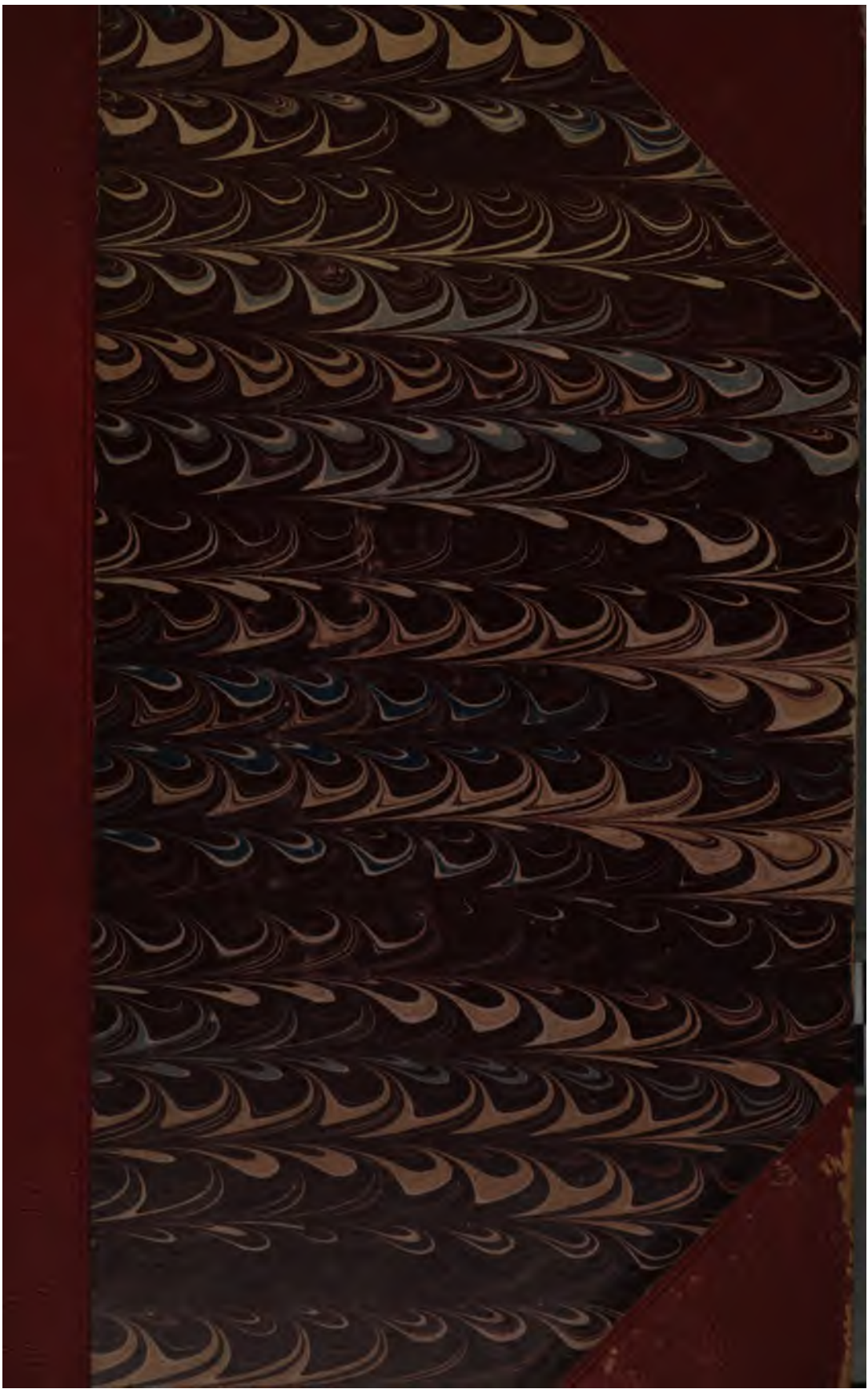

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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF

REPORT OF THE PROCEEDINGS

OF THE

SECOND SUMMER MEETING

HELD AT

LAKE GEORGE, N. Y.

FROM JUNE 29TH TO JULY 8TH, 1892

PHILADELPHIA, PA.
TIMES PRINTING HOUSE.
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CROSBYSIDE HOTEL, LAKE GEORGE, N. Y.

10 A. M., Wednesday, June 29, 1892.

According to published notice the American Association to Promote the Teaching of Speech to the Deaf met at this hour in the parlor of the Crosbyside Hotel. The President, Dr. Alexander Graham Bell, called the members to order and announced that the proceedings of the Second Summer Meeting of the Association would now be opened.

Devotional exercises were conducted by Dr. Philip G. Gillett, Superintendent of the Illinois Institution, who read from the eighth chapter of St. Mark, twenty-second to twenty-fifth verses inclusive, closing with prayer.

The President announced as the order of the day, an address by himself; a lecture on "How we Breathe," by Dr. D. Greene; a paper on "Speech Reading," by Miss Harriet E. Hamilton; School of Practice, conducted by Miss Caroline A. Yale; a lesson in Visible Speech, by the President.

It was also announced that there would be a business meeting in the evening.

The President then delivered the following address:

LADIES AND GENTLEMEN: As short a time ago as the year 1890, such a meeting as this was supposed to be impossible. Teachers of the deaf, of course, have met in conventions before; but they have been entertained at the expense of some school for the deaf. Teachers of the deaf, as a rule, are not overburdened with means, and it was supposed to be impossible to bring about any large gathering of this kind at the expense of the teachers themselves.

Well, last year we tried the experiment, and one hundred and fifty teachers of the deaf assembled at Lake George, — not for three or four days, as had been the case in conventions, but for ten days, — and paid their own expenses. Well, that was an experiment, and it was thought that we could not do that again, at least not the very next year; but again we have come together in increased numbers, full of energy and enthusiasm for our work. On behalf of the board of directors, I may say that we accept this large gathering as an endorsement of the value of the work that was accomplished during the last meeting. We accept it as a proof that you have been satisfied, and that the teachers who came here last year from far and wide, at considerable expense and inconvenience to themselves, have profited by what they found here, to such an extent that they are willing to incur all this expense and trouble again, in the belief that they will be amply repaid, and return to their schools better equipped for their work.

I need hardly say that the board of directors are highly gratified by this mark of your confidence, and we trust that you will all go away from Lake George with the feeling that you have received still more that is of value and help to you in your noble work, and that you will all feel that it has paid you to come.

Upon this occasion it would be a proper thing for me to say a few words regarding the object of our Association, what we have accomplished during the past year, and what we aim to do in the future. However, that subject will come up in our meeting

this evening, and it will hardly, therefore, be necessary for me this morning to do more than direct your attention to the object that brings us together, — to the great end and aim of our existence as an Association, — and to give you some report of the progress of articulation teaching in America since our last meeting.

For a great many years past, the advocates of the different methods of educating the deaf have been in generous rivalry with one another; and in our conventions we have discussed very fully the relative merits of the different methods of instruction. Into the contest between the different methods of instruction we don't propose to go. We are an entirely neutral body. In 1886, at the California convention, a resolution was unanimously adopted by the entire profession, including teachers who were violently opposed to one another upon other subjects. It was in effect that every deaf child should be given a chance to learn to speak. It was in effect that earnest and persistent endeavors should be made in every school for the deaf, to teach every child to speak and read from the lips. That is the platform upon which we stand. We have come into existence as an organization, not to antagonize any school or system of schools, but to help schools of all sorts in America to carry out the spirit and purport of that resolution.

REPORT ON ARTICULATION TEACHING IN AMERICA.

I have made a close examination of the statistics of articulation teaching in order to ascertain how far that resolution has been carried into effect. Great progress is manifest since our last Summer Meeting; but though a great increase has taken place in the number of articulation teachers employed, and in the number of deaf pupils taught articulation, still the majority of our pupils have not yet been given an opportunity of learning to speak. I beg to place in your hands a detailed analysis of the statistics of speech-teaching in American schools for the deaf, which I have compiled from the American Annals of the Deaf for your information [See Appendix]. The statistics concerning articulation teaching extend back only as far as the year 1884.

The tables I have placed in your hands will show you the total number of pupils in each school for the deaf in the United

States and the Dominion of Canada, and the total number of pupils taught speech in each year from 1884 up to the present time. From these figures I have calculated the percentage of pupils taught speech in each school for the deaf; and the results are shown graphically in the charts placed in your hands. The tables also include the total number of teachers employed in each school for the deaf, and the total number of these who are engaged in teaching articulation.

The following Tables give a summary of the results shown in detail in the Appendix. They exhibit the general statistics of articulation teaching in the United States up to January, 1892:—

TABLE I.

STATISTICS COMPILED FROM THE AMERICAN ANNALS OF THE DEAF.

DATE.	INSTRUCTORS OF THE DEAF EMPLOYED IN AMERICAN SCHOOLS.			HEARING TEACHERS.		PERCENTAGE OF HEARING TEACHERS.	
	Total Teachers.	Deaf Teachers.	Hearing Teachers.	Articulation Teachers.	Not Articulation Teachers.	Articulation Teachers.	Not Articulation Teachers.
1884	508	155	353	–	–	–	–
1885	540	156	384	–	–	–	–
1886	566	158	408	134	274	32.8	67.2
1887	577	155	422	171	251	40.5	59.5
1888	606	154	452	199	253	44.0	56.0
1889	615	160	455	208	247	45.7	54.3
1890	641	170	471	213	258	45.2	54.8
1891	686	167	519	260	259	50.0	50.0

TABLE II.

STATISTICS COMPILED FROM THE AMERICAN ANNALS OF THE DEAF.

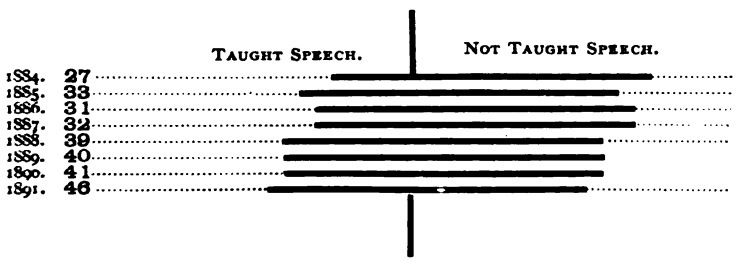
DATE.	NUMBER OF PUPILS IN AMERICAN SCHOOLS FOR THE DEAF.			PERCENTAGE OF PUPILS IN AMERICAN SCHOOLS FOR THE DEAF.	
	Total Pupils.	Taught Speech.	Not Taught Speech.	Taught Speech.	Not Taught Speech.
1884	7,482	2,041	5,441	27.2	72.7
1885	7,801	2,618	5,183	33.5	66.4
1886	8,050	2,484	5,566	30.8	69.1
1887	7,978	2,556	5,422	32.0	67.9
1888	8,372	3,251	5,121	38.8	61.1
1889	8,575	3,412	5,163	39.7	60.2
1890	8,901	3,682	5,219	41.3	58.6
1891	9,232	4,245	4,987	46.0	54.0

The total number of teachers of the deaf employed in the United States in 1890 was 641, and in 1891, 686. This is an increase of 45. When we come to analyze the details we find that this is an increase *exclusively of articulation teachers.* This is shown by the following facts: In 1890 there were 213 articulation teachers employed, whereas in 1891 there were 260, — an increase of 47 articulation teachers. The first statistics upon this subject were collected by the Annals in 1886. In that year we find articulation teachers constituted 32.8 per cent. of the hearing teachers in our schools for the deaf; in 1887 they constituted 40.5 per cent.; in 1888, 44 per cent.; in 1889, 45.7 per cent.; in 1890, 45.2 per cent.; in 1891, the latest returns, 50 per cent. Indeed, they constituted one more than 50 per cent. There were 260 articulation teachers to 259 hearing teachers who were not engaged in articulation work.

In regard to the proportion of deaf pupils taught speech, the increase during the past year has been very marked. In 1890 there were 3,682 deaf children in the United States taught speech; in 1891, 4,245, an increase of 563. In 1890, 41.3 per cent. of our pupils were taught speech; in 1891, 46 per cent. I am sure that this increase is due very greatly to the stimulus of the first Summer Meeting of this Association.

The following diagram illustrates in a graphical manner the percentage of pupils taught speech in American schools for the deaf since the year 1884, when statistics upon the subject were first collected by the Annals: —

PERCENTAGE OF PUPILS TAUGHT SPEECH.



No attempts to teach speech have been made to the percentage of pupils shown by the black lines on the right-hand side of the diagram; and, unfortunately, these pupils still constitute

the majority of the whole. There is still work, therefore, for this Association to do, for no attempt has yet been made to teach speech to 54 per cent. of our pupils. Of course, the statistics in the Annals include the whole of our pupils, old as well as young; and it has occurred to me, therefore, that they may not give us a true indication of the extent to which the California Resolution is being carried out in the country at large, and that a better indication would be obtained by statistics concerning younger pupils alone. I therefore sent out a circular letter of inquiry to the superintendents and principals of American schools for the deaf, requesting, —

(1) The total number of new pupils admitted during the school year just closed;

(2) The number of new pupils taught speech; and

(3) The number of these taught *by* speech.

The following table shows the results of the inquiry: —

SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF, 1891.

SCHOOLS FOR THE DEAF.		No. of Pupils within the year 1891. [From the Annals for Jan. 1892.]			New Pupils admitted during the school-year ending June, 1892. [From replies to circular letter of A. G. Bell.]				
		Total Pupils.	Total Taught Speech.	Percentage Taught Speech.	Total New Pupils.	Total Taught Speech.	Total Taught by Speech.	PERCENTAGE. Taught Speech.	PERCENTAGE. Taught by Speech.
UNITED STATES,	A . .	5,614	2,960	53	836	580	363	69	43
	B . .	1,619	759	47	266	189	–	71	–
	C . .	1,999	536	27	–	–	–	–	–
Total,		9,232	4,255	46	1,102	769	–	70	–
CANADA, . . .	A . .	445	92	21	59	20	5	35	8
	B . .	309	132	43	63	41	–	65	–
	C . .	39	5	13	–	–	–	–	–
Total,		793	229	29	122	61	–	50	–

A. Complete returns were received from these schools.

B. The returns received from these schools did not state definitely the number of new pupils taught by speech. (See Table in the Appendix.) The Canadian schools marked "B" refer to the two Roman Catholic schools in Montreal. They return 126 pupils, or 41 per cent. of the whole, as taught by speech; but do not state how many of the new pupils were so taught.

C. These schools did not reply to the circular letter of inquiry.

Replies have been received from schools containing 7,987 pupils, or 80 per cent. of the whole number under instruction in the United States and Canada. It is encouraging to note that while 46 per cent. of the whole number in our schools last year were taught articulation, 70 per cent. of the younger pupils were afforded an opportunity of learning to speak. The statistics published in the Annals are somewhat defective, because, while they give us the total number of pupils taught speech, they do not give us the number taught *by speech;* so that we have no statistics by which we can measure the progress of the oral method of teaching in America.

Professor Joseph C. Gordon of the National Deaf-Mute College, in some editorial remarks prefacing a volume entitled "The Education of the Deaf," about to be issued by the Volta Bureau, says: "The returns of pupils taught *by* speech are incomplete. The number reported for 1891 is 963, or 10.4 per cent. of the school population." The above table indicates that the percentage, in the case of the younger pupils, must be very much larger. Out of 836 new pupils admitted during the past school-year, 363, or 43 per cent., were taught by speech.

This percentage, however, is probably excessive, because the table shows that those schools which have done the most work in articulation teaching have been the most ready to respond to inquiries relating to the subject. We cannot, therefore, assume that the percentage holds for the schools that have not replied to my circular letter.

Still, even if we assume that these 363 deaf children were all who were taught by the oral method, the percentage must be very much higher than that given by Professor Gordon. This will be obvious from the following considerations: —

The schools containing these cases had a total attendance of 5,614 pupils, of whom 836, or 15 per cent., were new pupils admitted during the past school-year.

If this proportion held good for the whole country, then there must have been a total of 1,385 new pupils, — or 15 per cent. of 9,232, — admitted during the year just closed.

Now 363 of these, at least — or 26 per cent. — we know were taught by speech. Hence, for the younger pupils the

true proportion taught by speech lies somewhere between 26 and 43 per cent. of the whole. The lowest estimate very much exceeds the figures of Professor Gordon.

We have no means of ascertaining whether the proportion of our pupils taught by speech is increasing or diminishing; and I think it would be well for this Association to direct the attention of the editor of the Annals to the importance of collecting and publishing statistics upon this subject.

I have glanced over the reports of American schools for the deaf that have been published since our last meeting, and there are a few points contained in them to which I shall direct your attention.

In the Twelfth Biennial Report of the American Asylum at Hartford, the principal, Dr. Job Williams, gives his views upon what constitutes success in articulation work. He says, —

> "We hold that direct and earnest effort should be made by expert teachers of those branches, to teach speech and speech-reading to every pupil, and in no case should that effort be abandoned until those teachers are convinced that the pupil will never acquire enough of speech to be of any practical use. In some very unpromising cases the possibility of acquiring speech is not given up for two or three years. Here let me say that the criterion of success in speech should not be perfect naturalness of tone and inflection. It would be unreasonable to expect that, where the sense of hearing is wanting. Intelligibility is the prime requisite of good speech. Tone and inflection are secondary considerations. *Any pupil who has mastered speech and lip-reading so far as to be able to carry on conversation in regard to the ordinary affairs of life in speech so plain as to be readily understood by the members of his own family, even though others fail to understand him, should be counted as a successful articulator and lip-reader.* It is worth while to continue the instruction in these branches in many cases where the degree of success falls considerably short of the ability to carry on an extended conversation, provided that what of speech is acquired is easily understood. We must recognize the fact that intelligible speech is the readiest and most

> acceptable means of communication with people in general, but it must be intelligible. It is worth while for a child to gain even a limited amount of speech and lip-reading (the latter is as important as the former) in all cases where it can be done without serious sacrifice in mental development and acquisition of language."

We must all agree with Mr. Williams in these remarks. We should, of course, aim to have our pupils speak so clearly and distinctly that any one can understand them; but I am sure Mr. Williams is right in saying that a much lower degree of proficiency might constitute a pupil a successful articulator and speech-reader. Mr. Williams rightly claims that oral instruction is successful if the speech of pupils is intelligible to their friends in their own homes and among their own people, even though others have difficulty in understanding what they say. It is a very difficult thing for a teacher, and especially for an articulation teacher, to realize this. I have been myself a teacher of articulation, and I know how you feel. Your ears are sensitive to mispronunciations, as mine were. It is difficult for you to realize that voices which to you may be disagreeable in tone, may be very sweet and pleasant to those at home. It is difficult for you to realize that imperfect speech may be better than none at all; and that speech so defective as to be unintelligible to strangers, may be of the greatest value to the pupils, in their own homes and among their own people, as a means of communication. This fact has been specially impressed upon my attention by the report of the Mississippi Institution, which, in many respects, is a very remarkable document. That Institution has had a class of twelve pupils taught altogether by speech and speech-reading. While all of them have made great progress in speech-reading, some have gained but little power of speech. Mr. Dobyns, the Principal, says, —

> "While I have been more than satisfied that the Institution was justifiable in the small outlay in this department of instruction, yet, for fear my zeal to keep pace with the times may have gotten the better of my judgment, I submitted the following questions to the parents of the pupils in this class, knowing they desired the very best thing for their children."

I will not take up your time by reading the questions and replies, but will merely say that the answers demonstrate that speech which may be thought very little of by the sensitive ear of the teacher, is considered a blessing at home. None of these parents desire their children to be removed from the oral department of the school; but, on the contrary, they all earnestly request that their children be continued in this department. Where there is any difficulty in deciding upon the value and success of the articulation taught to our pupils, with whom should the decision rest? Surely with those who are nearest and dearest to our pupils, — with those who have their interest most at heart. Mr. Dobyns, I am sure, is right in referring the question to the parents and friends at home.

In this report, Mr. Dobyns incidentally remarks that now, whenever a new pupil enters the Institution, the request comes from the parents: "Please see if you can't teach my child to speak." He has, therefore, asked from the Mississippi Legislature an increase of appropriation to enable him to employ another articulation teacher; and I am sure we all hope he may get it.

There is another point in the report of the Mississippi Institution to which I would direct your attention. Mr. Dobyns has collected and published statistics concerning the earnings of former pupils, and he goes to his State Legislature with the proof that the graduates of his school, so far from being dependent upon the public for support, are actually wealth producers, earning annually a larger amount than the State appropriates for the support of the school. He proves that it is not a matter of charity to educate the deaf, and demonstrates that the money appropriated for this purpose is in the nature of an investment, yielding profitable returns to the State.

I would urge all schools for the deaf to carry out this plan of Mr. Dobyns, and collect statistics concerning the earnings of former pupils. I would suggest that these statistics should be so tabulated as to distinguish the earnings of the pupils who could articulate and read speech from the mouth, from those who could not. I have no doubt that pupils who speak have an advantage in life over those who do not, and that statistics will

demonstrate that their average earnings exceed the average earnings of those who are unable to articulate. If this should turn out to be the case, what an argument it would be to present to legislatures in favor of appropriations for articulation teaching!

One of our main objects as an association is to help schools for the deaf in their efforts to teach speech and speech-reading, and I do not know how we could better accomplish that object than by collecting statistics of this character. I venture to predict, we shall find that our former pupils who speak, even though they may be unable to read speech, earn more per annum than those who are forced to resort exclusively to manual means of communication; and those of them who can read speech, as well as speak, are still better off in life.

Mr. Davidson, of the Pennsylvania Institution, has suggested another valuable line of inquiry. From a comparison of numerous letters in his possession, he makes the assertion, that orally-taught pupils improve in their knowledge and use of language after leaving school. I would suggest the importance of preserving uncorrected letters of your pupils during the whole period of their school-life, and of keeping up correspondence with them after they leave school. A comparison of letters, written by the same pupil at different periods of time, would be invaluable as a means of determining his progress; and the correspondence in adult life might also be utilized for the purpose of collecting statistics concerning the earnings and general success in life of our pupils.

THE following circular letter of inquiry was sent to the principal of every school for the deaf in the United States and Canada: —

HOTEL BELLEVUE, BOSTON, MASS.,
May 16, 1892.

DEAR SIR: I shall be very much obliged if you will please fill out the accompanying blank table concerning the pupils admitted to your school during the present year.

I desire to use the figures in my annual report on the condition of articulation teaching in America, which is to be presented very soon to the American Association to Promote the Teaching of Speech to the Deaf. Kindly send an early reply to

Yours truly,

ALEXANDER GRAHAM BELL.

The blank form for reply shown below was enclosed with the above.

.....

.....1892.

MR. ALEXANDER GRAHAM BELL,
Hotel Bellevue, Boston, Mass.

DEAR SIR: In reply to your request, I beg to return the following statistics relating to articulation teaching in

the .....
for the school-year 1891–92.

1. Total number of new pupils admitted during the present school-year . . ..
2. Total number of new pupils taught speech . . . .
3. Total number of these taught by speech . . . .

Yours truly,

.....

In response to the above circular letter of inquiry the following returns have been received: —

Replies to Circular Letter Received in June, 1892.

States and Territories.	Schools for the Deaf in the United States.	New pupils admitted during school-year ending June, 1892.		
		Total Pupils.	Taught Speech.	Taught by Speech.
Alabama	Alabama Institute	15	7	7
Arkansas	Arkansas Institute[a]	21	14	0
California	California Institution	–	–	–
Colorado	Colorado School	18	15	10[b]
Connecticut	American Asylum	35	25[c]	0
Connecticut	Whipple's Home School[d]	7	7	7
District of Columbia,	Kendall School	13	13	–[e]
District of Columbia,	National College	15	15	0
Florida	Florida Institute	6	5	5
Georgia	Georgia Institution	–	–	–
Illinois	Illinois Institution	89	89	–[f]
Illinois	Chicago Day-Schools	–	–	–
Illinois	McCowen Oral School	7[g]	7	7
Illinois	Ephpheta School	18	17	–
Indiana	Indiana Institution[h]	35	8	0
Indiana	Evansville School	–	–	–
Iowa	Iowa Institution	–	–	–
Iowa	Eastern Iowa School	–	–	–
Kansas	Kansas Institution	36	6	–[i]
Kentucky	Kentucky Institute	57	24	8
Louisiana	Louisiana School	–	–	–
Louisiana	Chinchuba Institution	–[j]	–	–
Maine	Portland Day-School	2	2	2
Maryland	Maryland School	7	6	3
Maryland	Maryland School for Colored	1	0	0
Maryland	Mr. Knapp's Institute	–	–	–
Massachusetts	Clarke Institution	24	24	24
Massachusetts	Horace Mann School[k]	25	25	25

a Arkansas Institute. "Not taught speech. 1, malformation of organs of speech; 3 over twenty years of age; 3 colored pupils, no appropriations." — F. D. Clarke.

b Colorado School. "Aural." — John E. Ray.

c American Asylum. "One or two others, who for special reasons were not put into articulation classes this year, will be next." — Job Williams.

d Whipple's School. "There are no signs of any kind taught in our school." — Margaret Hammond.

e Kendall School. "They are taught partly by speech, partly by other methods." — James Denison.

f Illinois Institution. "None are taught *exclusively by speech*, though many are taught both by speech and signs as well as by writing and dactylology."

g McCowen Oral School. "Four of the above pupils had been in school at some previous time, here or elsewhere, while three were 'beginners,' never having attended any school before." — Mary McCowen.

h Indiana Institution. "Intend to start a class next year which will be instructed altogether by oral method." — R. O. Johnson.

i Kansas Institution. "None solely." — S. T. Walker.

j Chinchuba Institution. "Thirty-one new pupils: 16 males, 15 females." — H. Miquot.

k Horace Mann School. "Nine pupils had speech when admitted." — Sarah Fuller.

STATES AND TERRITORIES.	SCHOOLS FOR THE DEAF IN THE UNITED STATES.	NEW PUPILS ADMITTED DURING SCHOOL-YEAR ENDING JUNE, 1892.		
		Total Pupils.	Taught Speech.	Taught by Speech.
Massachusetts	New England Industrial School	5	3	0
Massachusetts	Sarah Fuller Home	3	3	3
Michigan	Michigan School	41	7	4
Michigan	German Lutheran Institute	7	7	7
Minnesota	Minnesota School *l*	36	36	0
Minnesota	St. Mary's Institute	13	13	– *m*
Mississippi	Mississippi Institution *n*	–	–	–
Missouri	Missouri School	50	12	4
Missouri	St. Louis Day-School *o*	12	12	–
Missouri	Maria Consilia Institute	11	11	2
Missouri	Miss Kugler's School	3	3	3
Nebraska	Nebraska Institute	18	18	18
New Jersey	New Jersey School	23	15	15
New Mexico	New Mexico School *p*	0	0	0
New York	New York Institution *q*	34	34	0
New York	Le Couteulx St. Mary's Institution,	17	17	5
New York	N.Y.Inst. for Improved Instruction *r*,	24	24	24
New York	St. Joseph's Institute	42	41	41
New York	Central N. Y. Institution	–	–	–
New York	Western N. Y. Institution	19	19	–
New York	Northern N. Y. Institution	–	–	–
New York	Miss Keeler's Class	2	2	2
New York	Albany Home School	3	3	3
North Carolina	North Carolina Institution	–	–	–
North Dakota	North Dakota School	12	4	– *s*
Ohio	Ohio Institution	–	–	–
Ohio	Cincinnati Public School	–	–	–
Ohio	Cincinnati Oral School	9	9	9
Ohio	Toledo School	–	–	–
Ohio	Notre Dame School	4	3	3
Oregon	Oregon School	–	–	–
Pennsylvania	Pennsylvania Institution	64	30	30
Pennsylvania	Western Pennsylvania Institution,	40	23	14
Pennsylvania	Pennsylvania Oral School	3	3	3
Pennsylvania	Home for Young Deaf Children	20	20	20

l MINNESOTA SCHOOL. "A thorough trial is made with all new pupils. Those who give evidence of success in speech and lip-reading will be formed into an oral class next term. Next year we shall have three oral teachers. Nearly half of the school receive more or less oral instruction daily."—J. L. NOYES.

m ST. MARY'S INSTITUTE. "Fifty taught by speech."—ERNESTINE NARDIN.

n MISSISSIPPI INSTITUTION. "Eighty-five pupils. Four new pupils taught speech; 4 taught by speech."—J. R. DOBYNS.

o ST. LOUIS DAY-SCHOOL. "Twelve new pupils enrolled this year; 1 remained only one day; 8 had attended other schools, 'oral' or 'combined,' for from two to six years. All are taught speech; none are taught by speech exclusively."—J. H. CLOUD.

p NEW MEXICO SCHOOL. "I would like to have articulation taught to some mutes who are capable of learning to speak here, if I could get more aid from the Territory; but this school has received a very small part of the appropriation granted to the school for its support, owing to poor and careless collections in the general tax system in this Territory."—LARS. N. LARSON.

q NEW YORK INSTITUTION. "Of the 310 pupils under instruction during the year, all but 2 were taught articulation and lip-reading, and 10 were taught by speech."—I. L. PEET, C. N. BRAINARD.

r NEW YORK IMPROVED. "Total number of pupils, 206. All taught speech, and by speech."—D. GREENBERGER.

s NORTH DAKOTA SCHOOL. "Seven taught by speech."—A. R. SPEAR.

STATES AND TERRITORIES.	SCHOOLS FOR THE DEAF IN THE UNITED STATES.	NEW PUPILS ADMITTED DURING SCHOOL-YEAR ENDING JUNE, 1892.		
		Total Pupils.	Taught Speech.	Taught by Speech.
Rhode Island	Rhode Island School	8	8	8
South Carolina	South Carolina Institution	19	6	– *t*
South Dakota	Dakota School	–	–	–
Tennessee	Tennessee School	14	13	13
Texas	Texas Asylum	35	10	–
Texas	Texas Institution for Colored	–	–	–
Utah	Utah School	11	11	5
Virginia	Virginia Institution	–	–	–
Washington	Washington State School	11	6	1
West Virginia	West Virginia School	16	8	8
Wisconsin	Wisconsin School	22	10	10
Wisconsin	Milwaukee Day-School	6	6	6
Wisconsin	La Crosse Day-School	3	3	3
Wisconsin	Wausau Day-School	–	–	–
Wisconsin	St. John's Catholic Institute	11	7	1

PROVINCES.	SCHOOLS FOR THE DEAF IN THE DOMINION OF CANADA.	NEW PUPILS ADMITTED DURING SCHOOL-YEAR ENDING JUNE, 1892.		
		Total Pupils.	Taught Speech.	Taught by Speech.
Manitoba	Manitoba Institution	–	–	–
New Brunswick	Fredericton Institution	6	2	2
Nova Scotia	Halifax Institution	7	1	0
Ontario	Ontario Institution *u*	38	12	0
Quebec	Catholic Institution for Males	20	15	– *v*
Quebec	Catholic Institution for Females,	43	26	– *w*
Quebec	Mackay Institution	8	5	3

t SOUTH CAROLINA INSTITUTION. "None are taught 'by speech' exclusively." — N. F. WALKER.

u ONTARIO INSTITUTION. "We have 251 pupils in attendance. Thirty-eight new pupils were admitted during the last school-year. Of these 38, 12 were put in our articulation classes, and taught speech three-quarters of an hour each day. In these articulation classes we have 49 pupils taught in the same way. There are no pupils in our Institution taught altogether orally." — R. MATHISON.

v CATHOLIC MALE OF PROVINCE OF QUEBEC. "Forty-seven taught by speech." — J. B. MANSEAU.

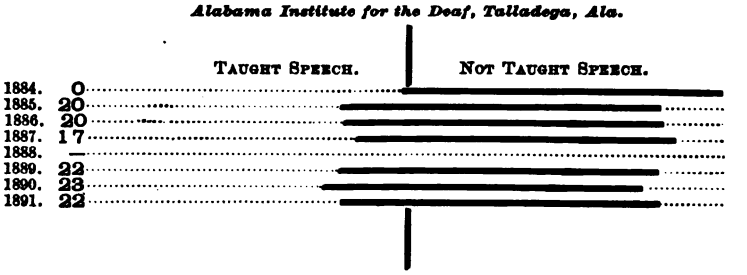
w CATHOLIC FEMALE OF PROVINCE OF QUEBEC. "Seventy-nine taught by speech." — SR. CHS. OF THE PROV.

Charts Showing Percentages.

(Compiled from the "American Annals of the Deaf.")

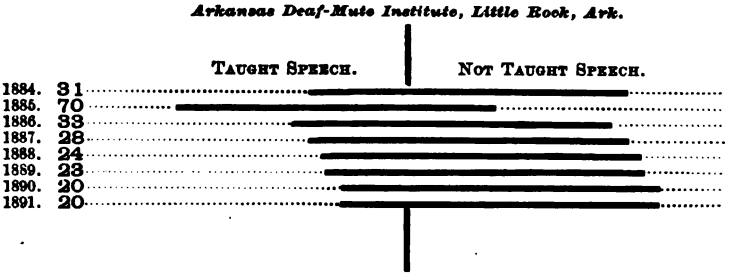
ALABAMA.

Alabama Institute for the Deaf, Talladega, Ala.



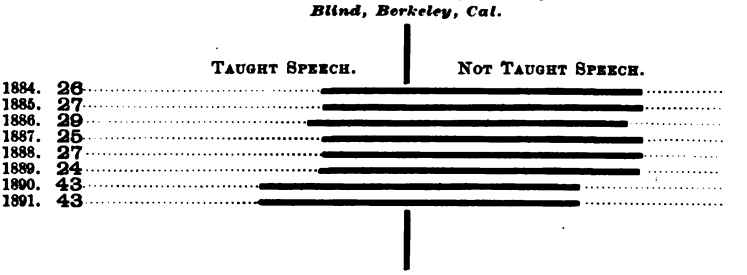
ARKANSAS.

Arkansas Deaf-Mute Institute, Little Rock, Ark.



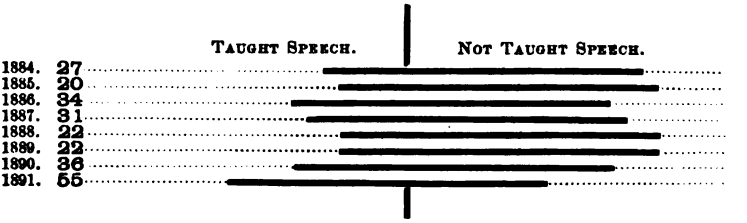
CALIFORNIA.

California Institution for the Education of the Deaf and Dumb and the Blind, Berkeley, Cal.



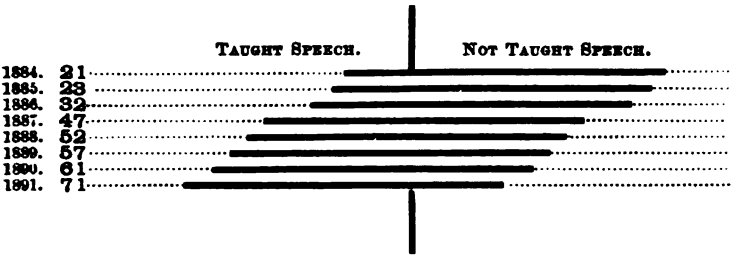
COLORADO.

Colorado School for the Deaf and the Blind, Colorado Springs, Col.



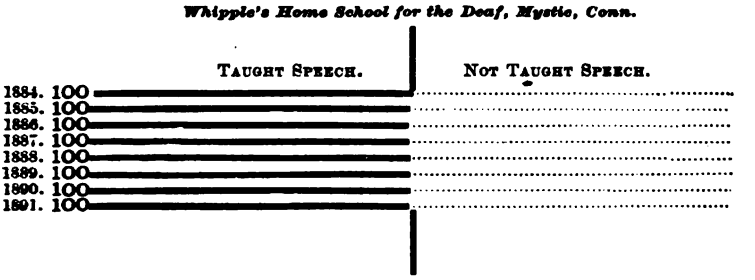
CONNECTICUT.

American Asylum for the Education and Instruction of the Deaf and Dumb, Hartford, Conn.



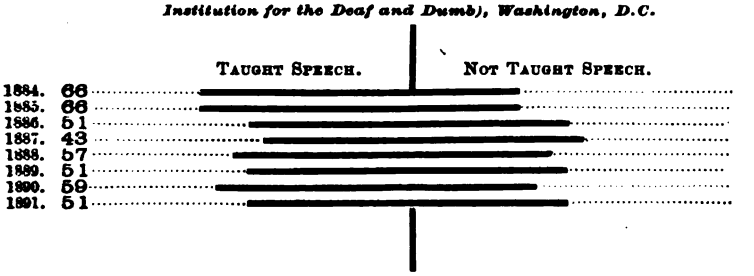
CONNECTICUT.

Whipple's Home School for the Deaf, Mystic, Conn.



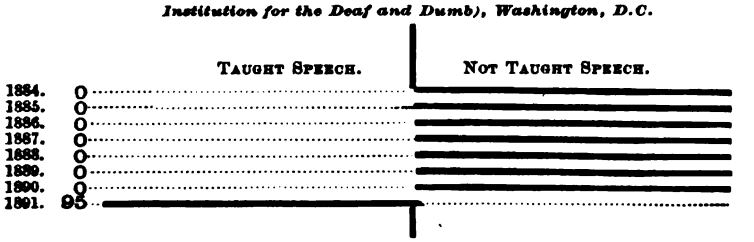
DISTRICT OF COLUMBIA.

Kendall School for the Deaf (Primary Department of the Columbia Institution for the Deaf and Dumb), Washington, D.C.



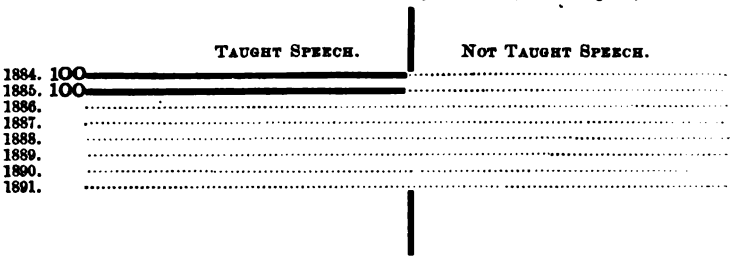
DISTRICT OF COLUMBIA.

National Deaf-Mute College (Collegiate Department of the Columbia Institution for the Deaf and Dumb), Washington, D.C.



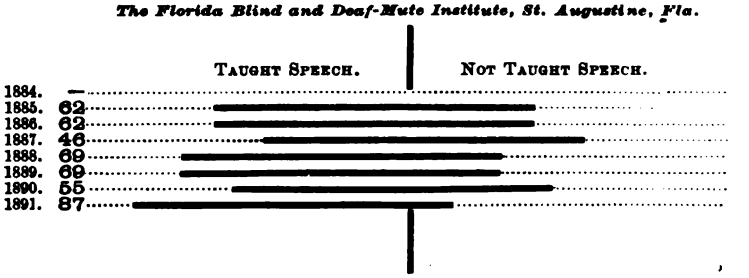
DISTRICT OF COLUMBIA.

Mr. Bell's Private School for Deaf Children, Washington, D.C.



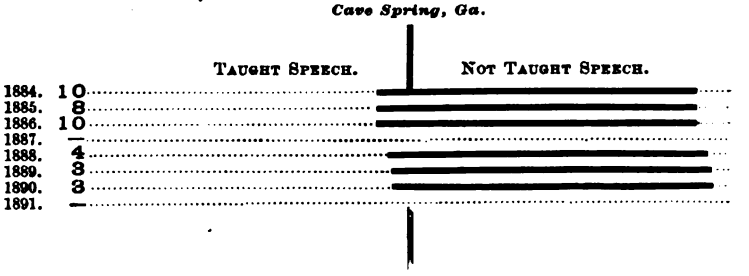
FLORIDA.

The Florida Blind and Deaf-Mute Institute, St. Augustine, Fla.



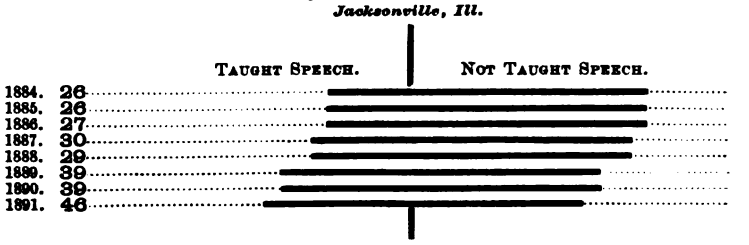
GEORGIA.

Georgia Institution for the Education of the Deaf and Dumb, Cave Spring, Ga.



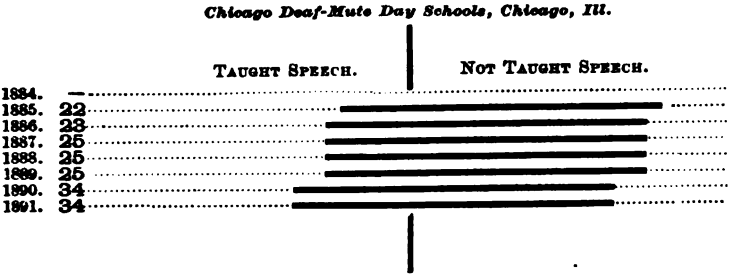
ILLINOIS.

Illinois Institution for the Education of the Deaf and Dumb, Jacksonville, Ill.



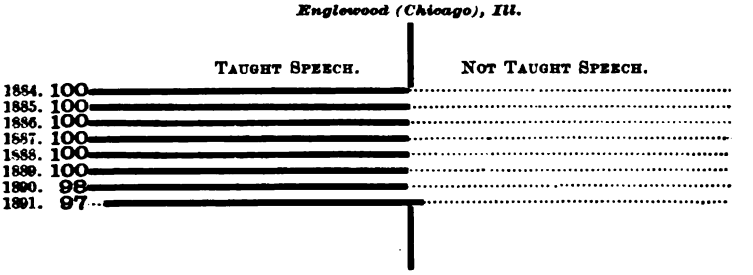
ILLINOIS.

Chicago Deaf-Mute Day Schools, Chicago, Ill.



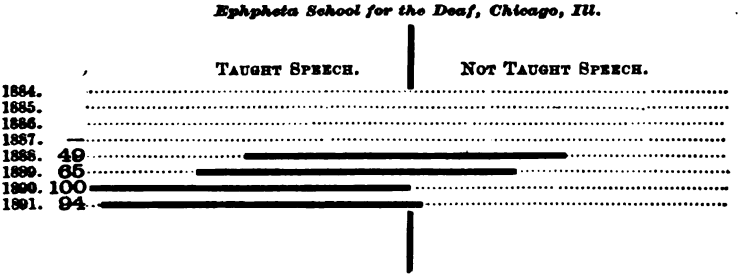
ILLINOIS.

The McCowen Oral School for Young Deaf Children, Englewood (Chicago), Ill.



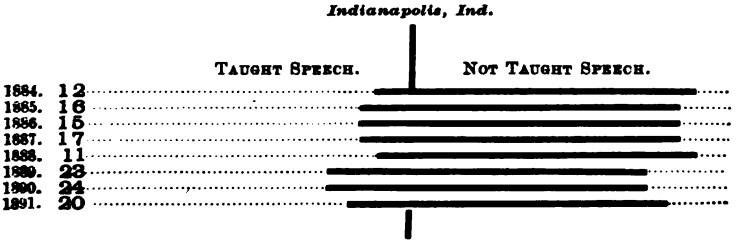
ILLINOIS.

Ephphata School for the Deaf, Chicago, Ill.



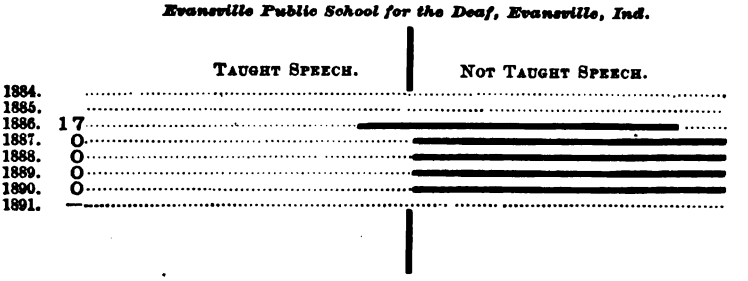
INDIANA.

Indiana Institution for the Education of the Deaf and Dumb, Indianapolis, Ind.



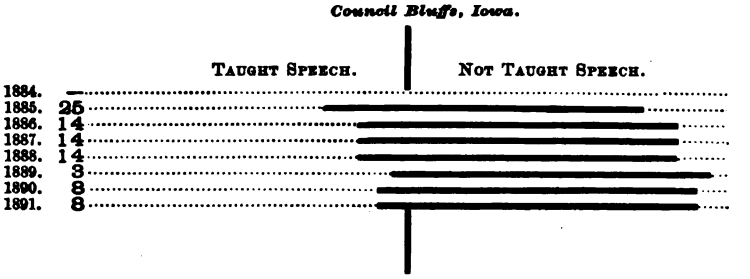
INDIANA.

Evansville Public School for the Deaf, Evansville, Ind.



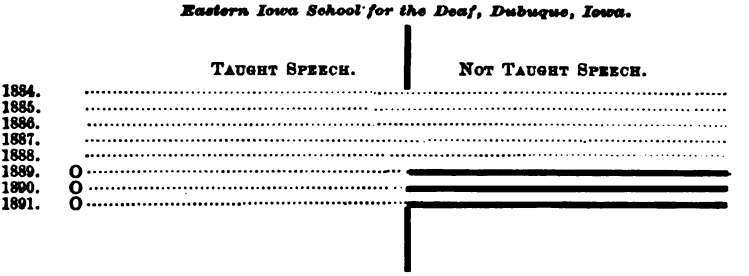
IOWA.

Iowa Institution for the Education of the Deaf and Dumb, Council Bluffs, Iowa.



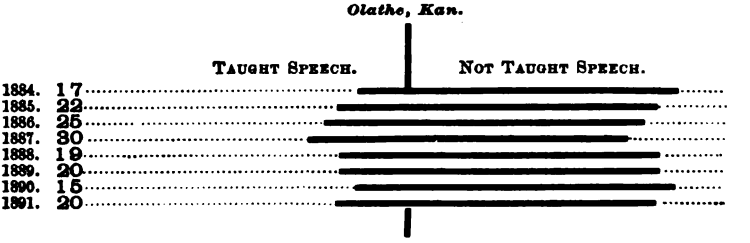
IOWA.

Eastern Iowa School for the Deaf, Dubuque, Iowa.



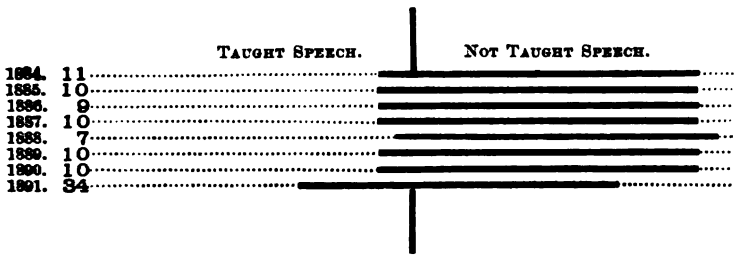
KANSAS.

Kansas Institution for the Education of the Deaf and Dumb, Olathe, Kan.



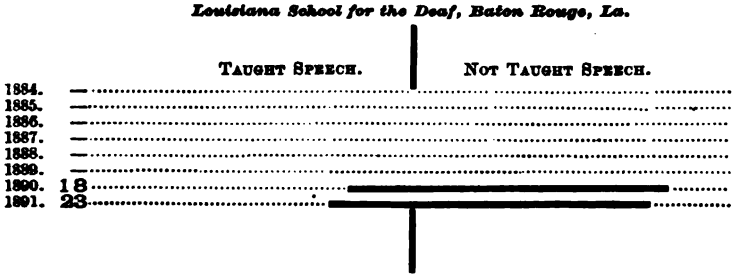
KENTUCKY.

Kentucky Institute for Deaf-Mutes, Danville, Ky.



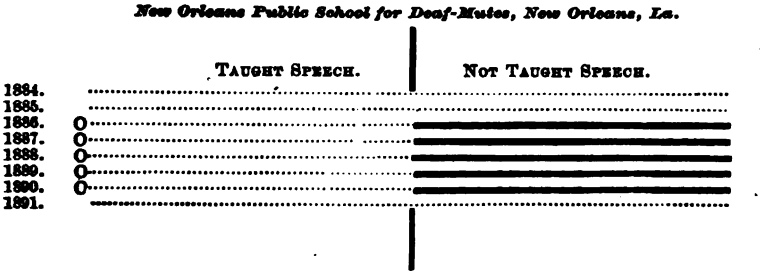
LOUISIANA.

Louisiana School for the Deaf, Baton Rouge, La.



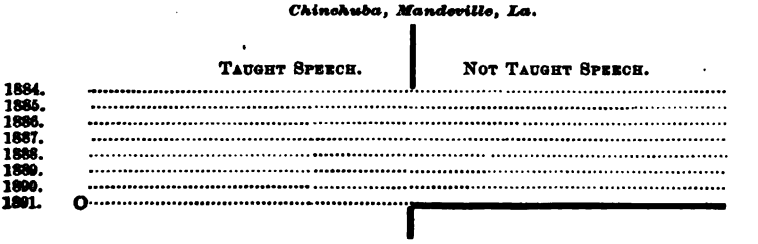
LOUISIANA.

New Orleans Public School for Deaf-Mutes, New Orleans, La.



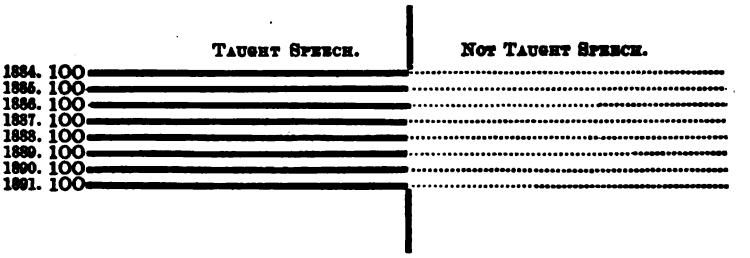
LOUISIANA.

Catholic Institution for the Deaf and Dumb, Chinchuba, Mandeville, La.



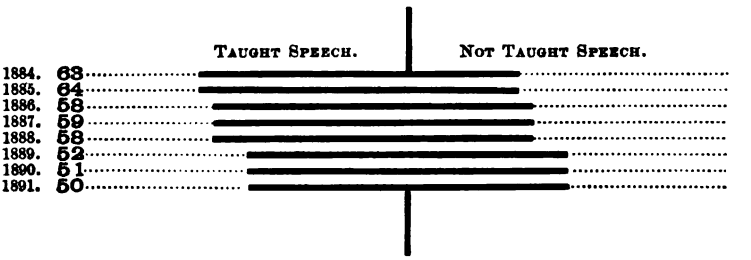
MAINE.

Portland School for the Deaf, Portland, Me.



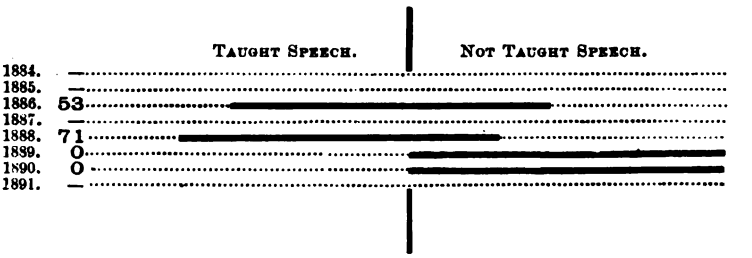
MARYLAND.

Maryland School for the Deaf, Frederick, Md.



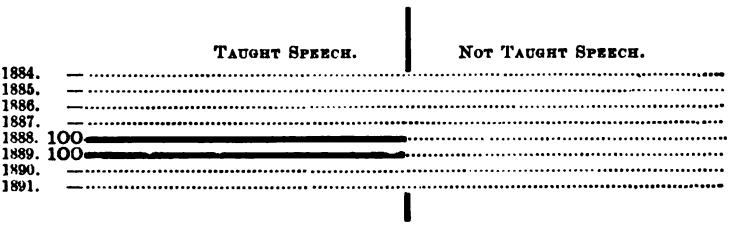
MARYLAND.

Maryland School for Colored Blind and Deaf, Baltimore, Md.



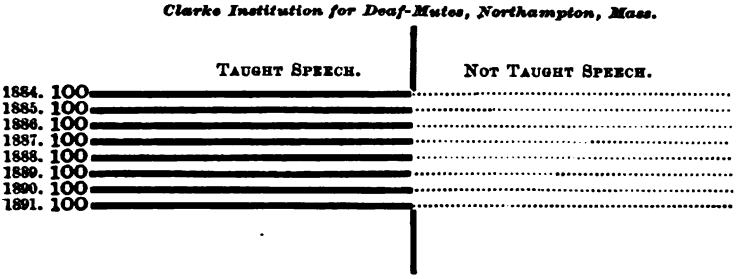
MARYLAND.

Mr. Knapp's Institute, Baltimore, Md.



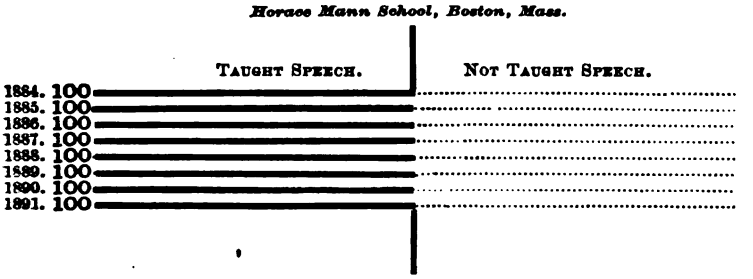
MASSACHUSETTS.

Clarke Institution for Deaf-Mutes, Northampton, Mass.



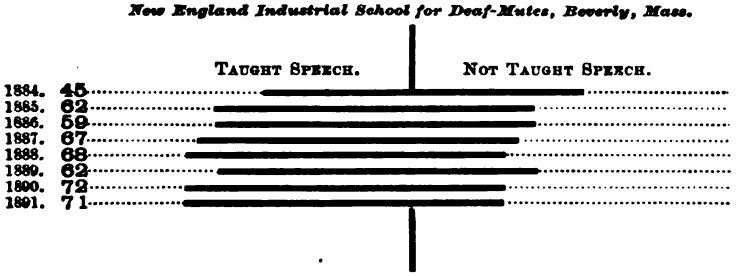
MASSACHUSETTS.

Horace Mann School, Boston, Mass.



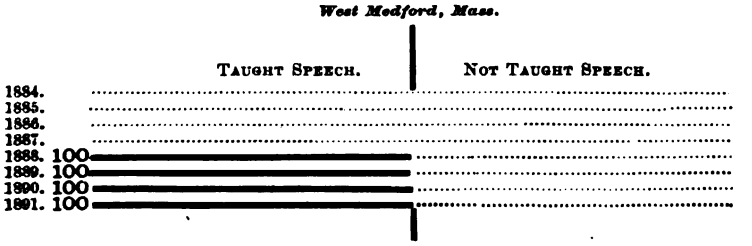
MASSACHUSETTS.

New England Industrial School for Deaf-Mutes, Beverly, Mass.



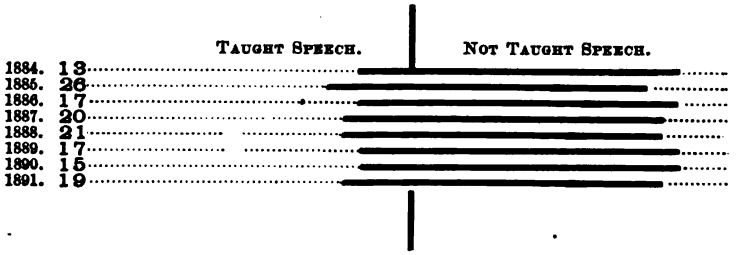
MASSACHUSETTS.

Sarah Fuller Home for Little Children who Cannot Hear, West Medford, Mass.



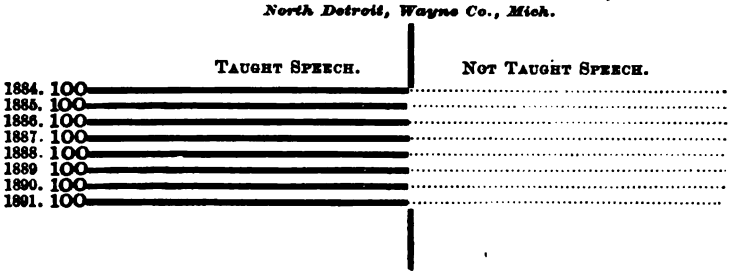
MICHIGAN.

Michigan School for the Deaf, Flint, Mich.



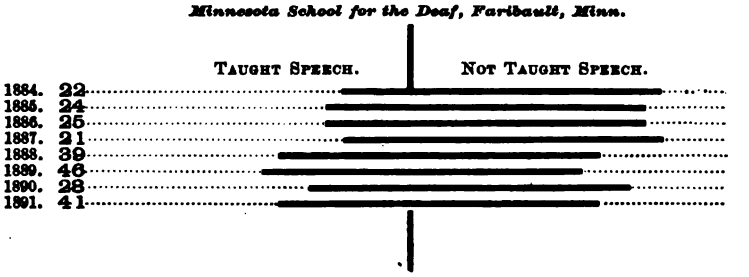
MICHIGAN.

German Lutheran Deaf and Dumb Institute, North Detroit, Wayne Co., Mich.



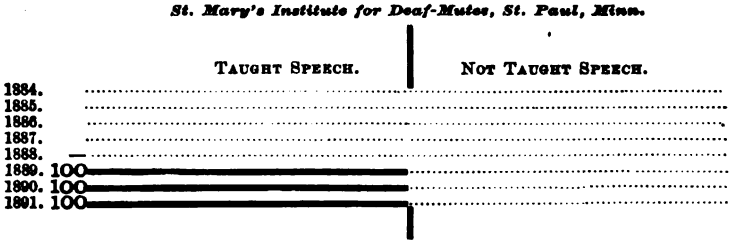
MINNESOTA.

Minnesota School for the Deaf, Faribault, Minn.



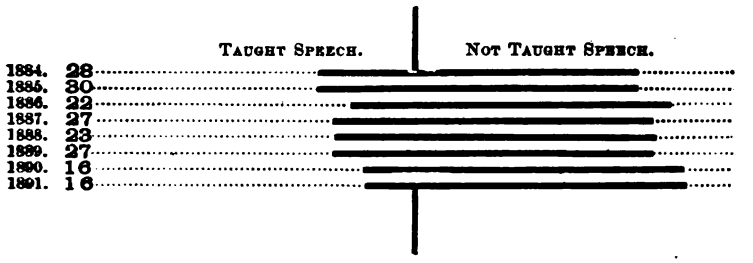
MINNESOTA.

St. Mary's Institute for Deaf-Mutes, St. Paul, Minn.



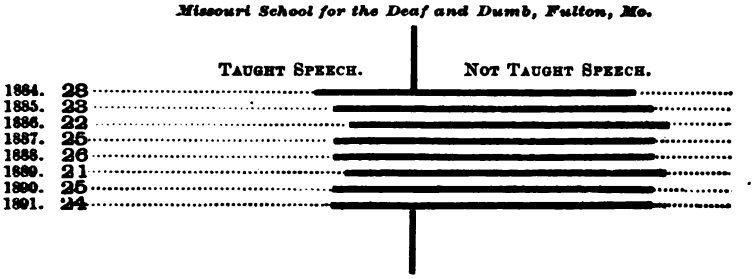
MISSISSIPPI.

Mississippi Institution for the Education of the Deaf and Dumb, Jackson, Miss.



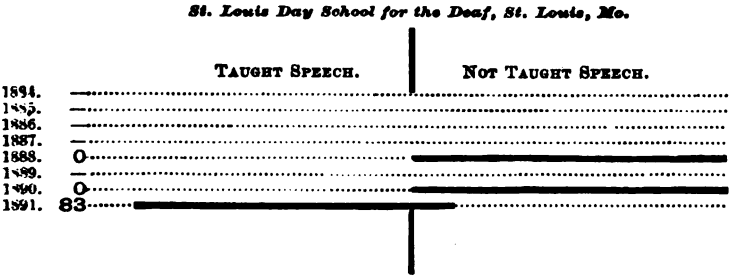
MISSOURI.

Missouri School for the Deaf and Dumb, Fulton, Mo.



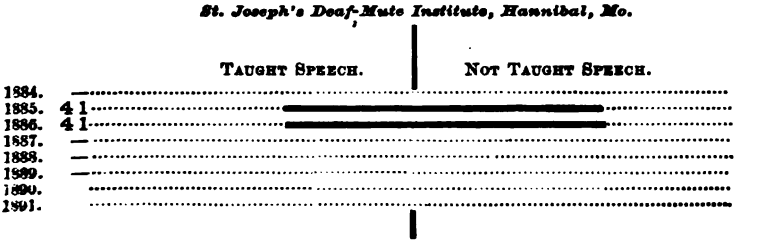
MISSOURI.

St. Louis Day School for the Deaf, St. Louis, Mo.



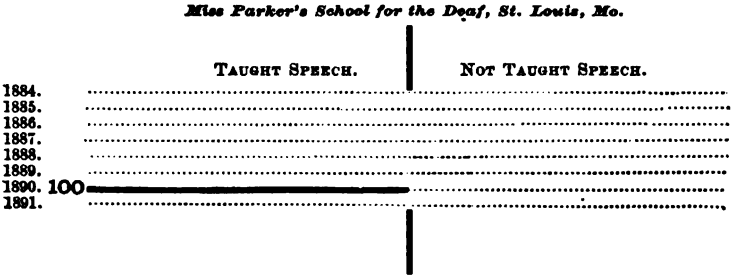
MISSOURI.

St. Joseph's Deaf-Mute Institute, Hannibal, Mo.



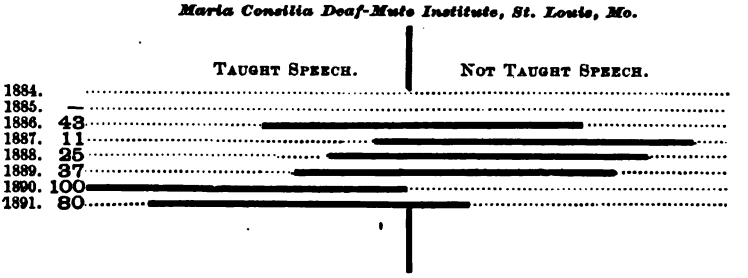
MISSOURI.

Miss Parker's School for the Deaf, St. Louis, Mo.



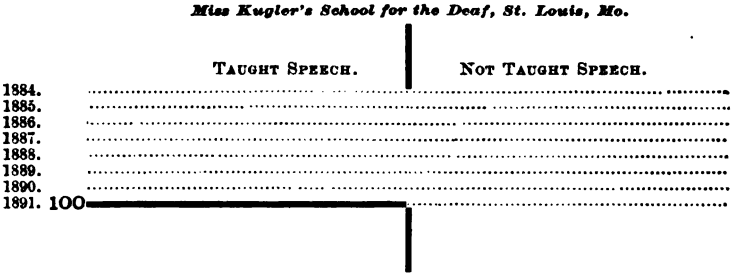
MISSOURI.

Maria Consilia Deaf-Mute Institute, St. Louis, Mo.



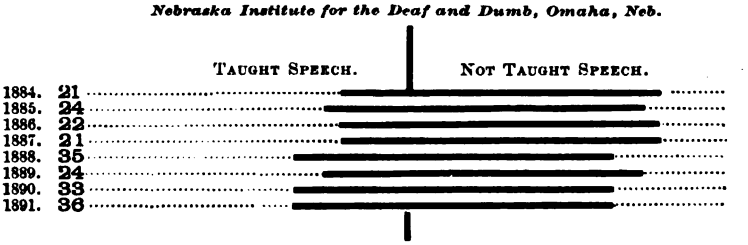
MISSOURI.

Miss Kugler's School for the Deaf, St. Louis, Mo.



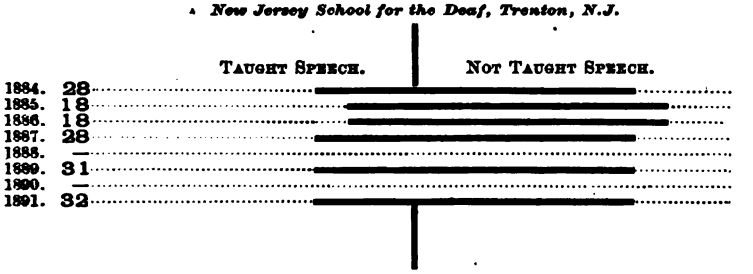
NEBRASKA.

Nebraska Institute for the Deaf and Dumb, Omaha, Neb.



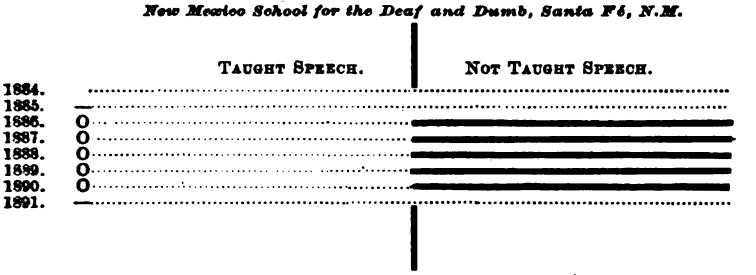
NEW JERSEY.

New Jersey School for the Deaf, Trenton, N.J.



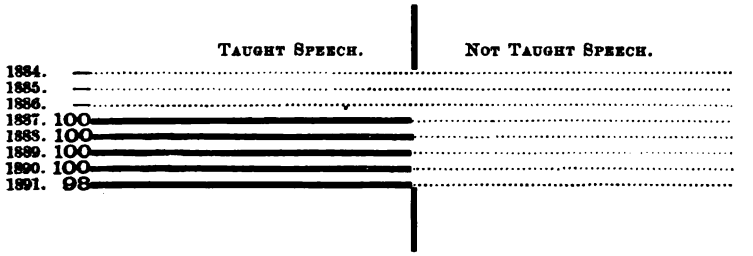
NEW MEXICO.

New Mexico School for the Deaf and Dumb, Santa Fé, N.M.



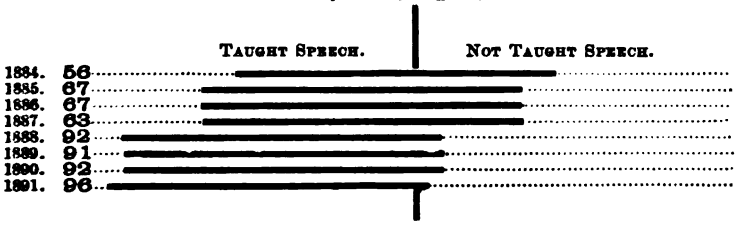
NEW YORK.

New York Institution for the Instruction of the Deaf and Dumb, New York, N.Y.



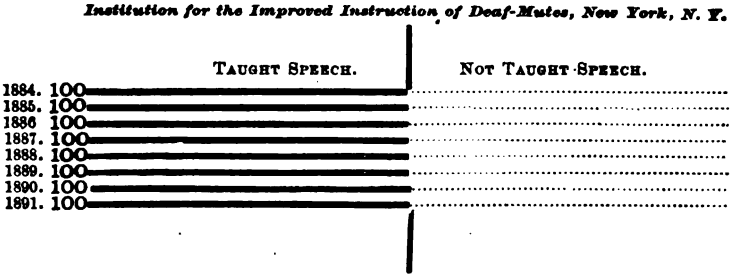
NEW YORK.

Le Couteulx St. Mary's Institution for the Improved Instruction of Deaf-Mutes, Buffalo, N.Y.



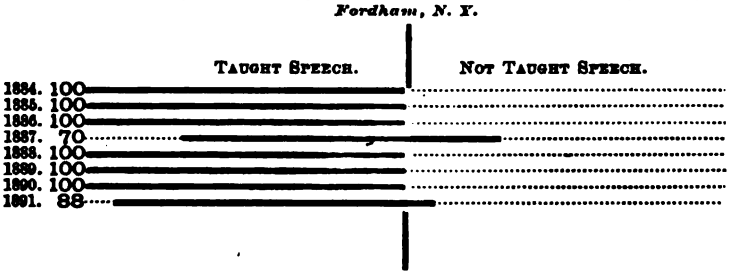
NEW YORK.

Institution for the Improved Instruction of Deaf-Mutes, New York, N. Y.



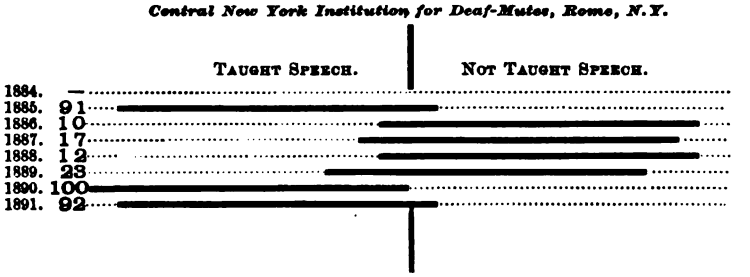
NEW YORK.

St. Joseph's Institute for the Improved Instruction of Deaf-Mutes, Fordham, N. Y.



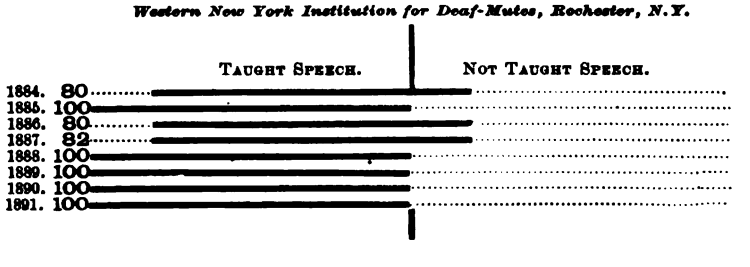
NEW YORK.

Central New York Institution for Deaf-Mutes, Rome, N. Y.



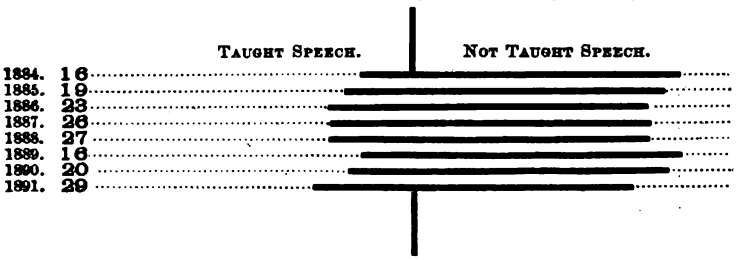
NEW YORK.

Western New York Institution for Deaf-Mutes, Rochester, N. Y.



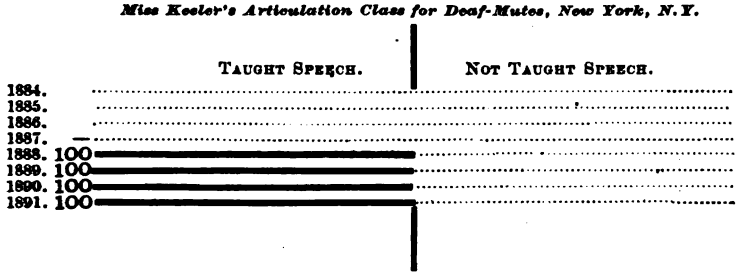
NEW YORK.

Northern New York Institution for Deaf-Mutes, Malone, N.Y.



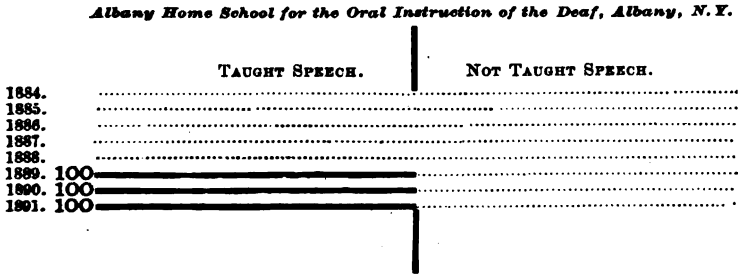
NEW YORK.

Miss Keeler's Articulation Class for Deaf-Mutes, New York, N.Y.



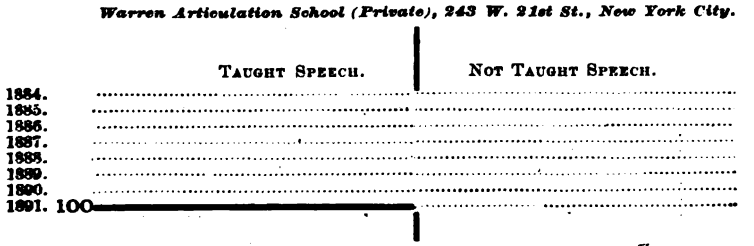
NEW YORK.

Albany Home School for the Oral Instruction of the Deaf, Albany, N.Y.



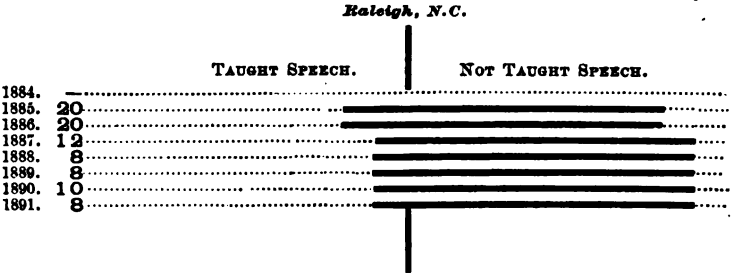
NEW YORK.

Warren Articulation School (Private), 243 W. 21st St., New York City.



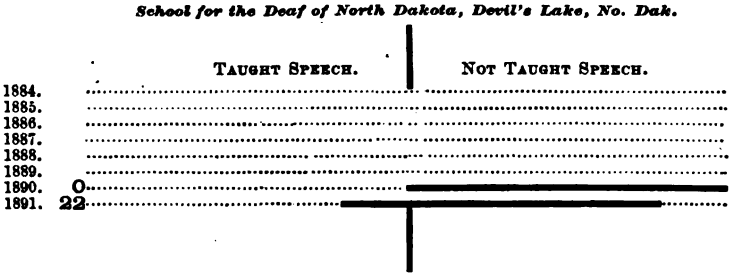
NORTH CAROLINA.

North Carolina Institution for the Deaf and Dumb and the Blind, Raleigh, N.C.



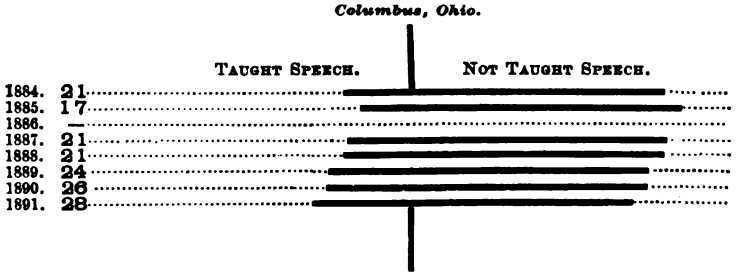
NORTH DAKOTA.

School for the Deaf of North Dakota, Devil's Lake, No. Dak.



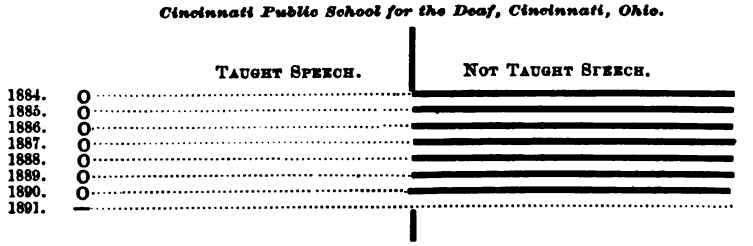
OHIO.

Ohio Institution for the Education of the Deaf and Dumb, Columbus, Ohio.



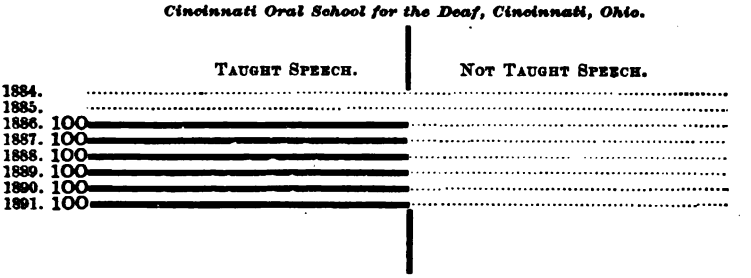
OHIO.

Cincinnati Public School for the Deaf, Cincinnati, Ohio.



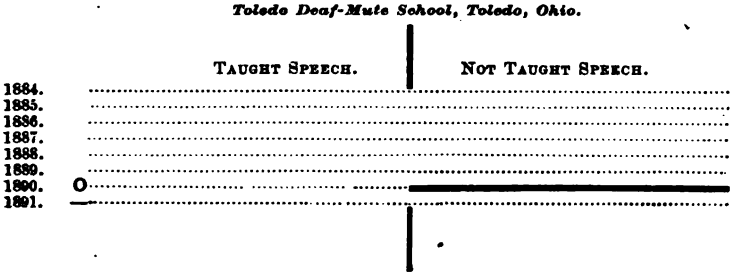
OHIO.

Cincinnati Oral School for the Deaf, Cincinnati, Ohio.



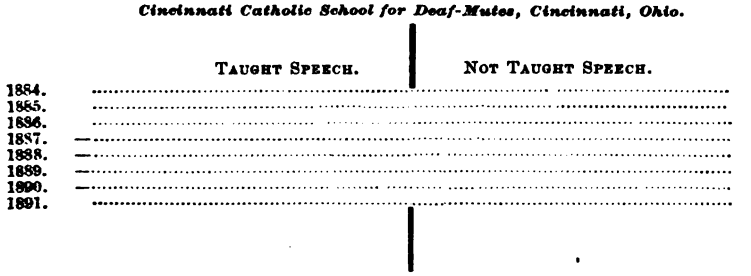
OHIO.

Toledo Deaf-Mute School, Toledo, Ohio.



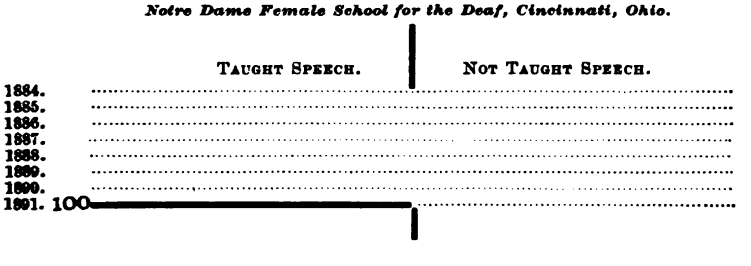
OHIO.

Cincinnati Catholic School for Deaf-Mutes, Cincinnati, Ohio.



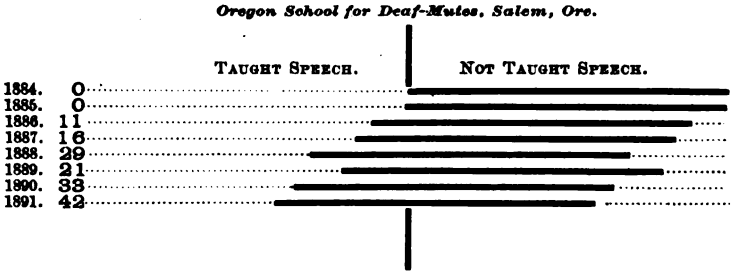
OHIO.

Notre Dame Female School for the Deaf, Cincinnati, Ohio.



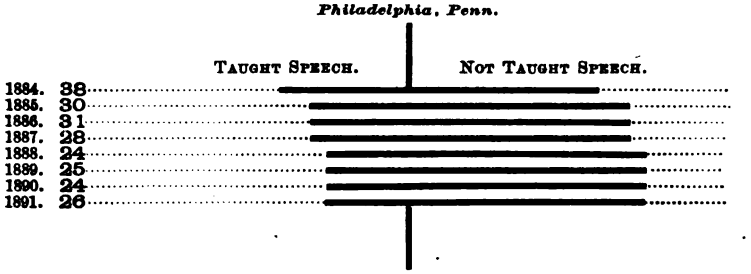
OREGON.

Oregon School for Deaf-Mutes, Salem, Ore.



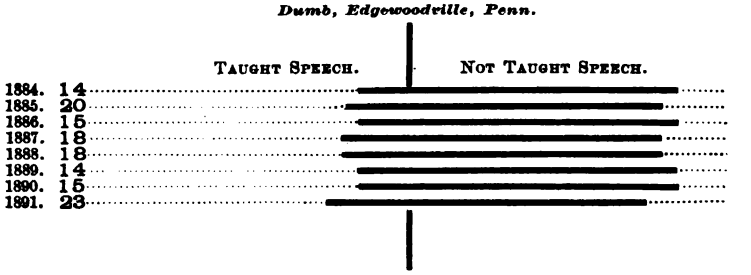
PENNSYLVANIA.

Pennsylvania Institution for the Deaf and Dumb, Philadelphia, Penn.



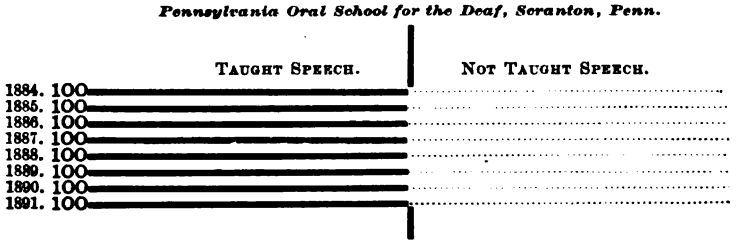
PENNSYLVANIA.

Western Pennsylvania Institution for the Instruction of the Deaf and Dumb, Edgewoodville, Penn.



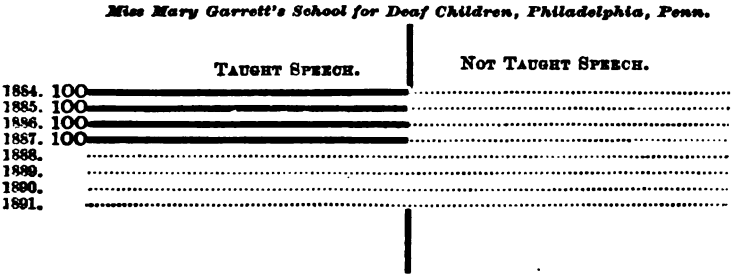
PENNSYLVANIA.

Pennsylvania Oral School for the Deaf, Scranton, Penn.



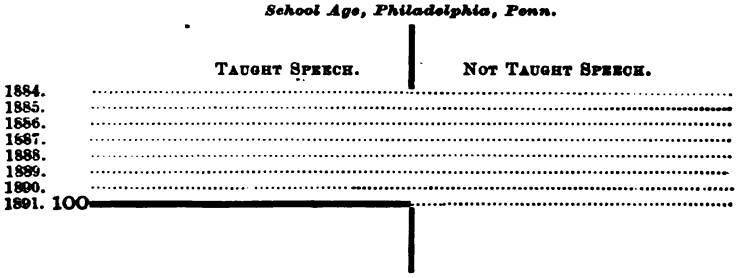
PENNSYLVANIA.

Miss Mary Garrett's School for Deaf Children, Philadelphia, Penn.



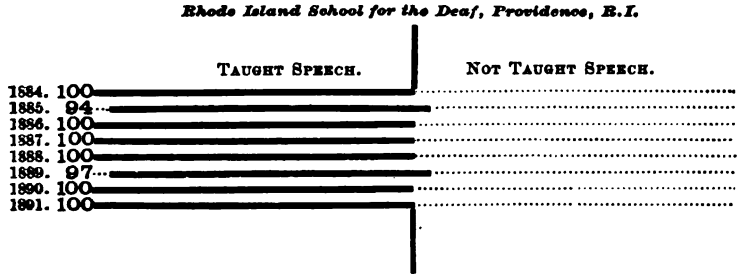
PENNSYLVANIA.

Home for the Training in Speech of Deaf Children before they are of School Age, Philadelphia, Penn.



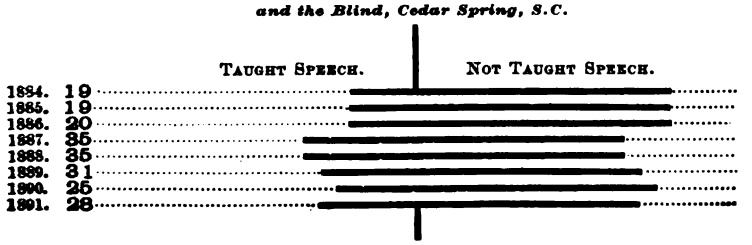
RHODE ISLAND.

Rhode Island School for the Deaf, Providence, R.I.



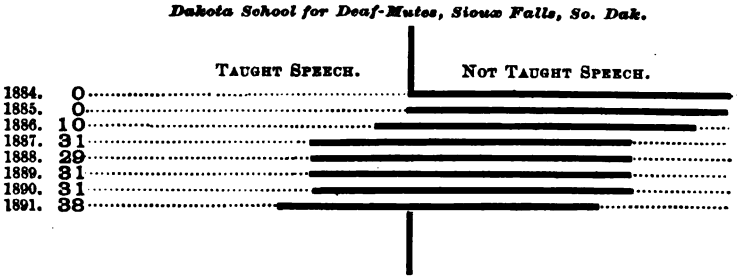
SOUTH CAROLINA.

South Carolina Institution for the Education of the Deaf and Dumb and the Blind, Cedar Spring, S.C.



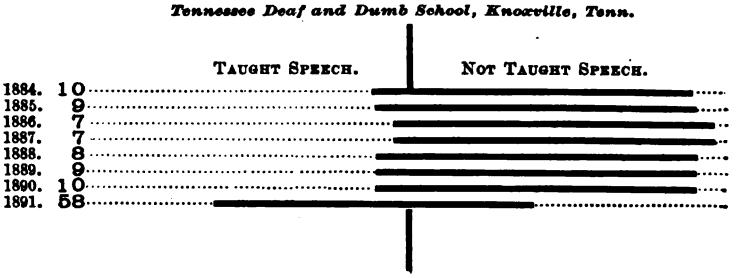
SOUTH DAKOTA.

Dakota School for Deaf-Mutes, Sioux Falls, So. Dak.



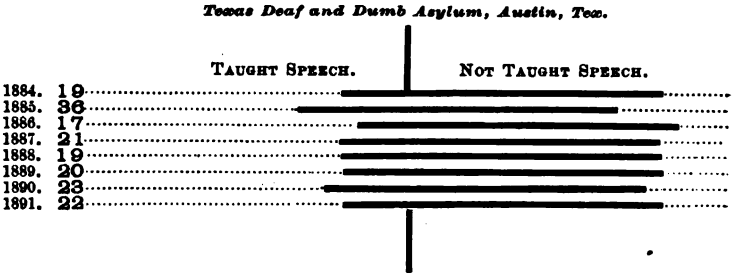
TENNESSEE.

Tennessee Deaf and Dumb School, Knoxville, Tenn.



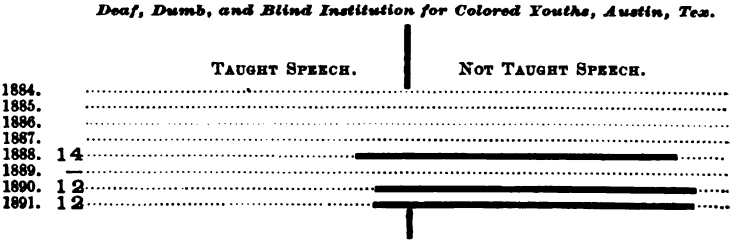
TEXAS.

Texas Deaf and Dumb Asylum, Austin, Tex.



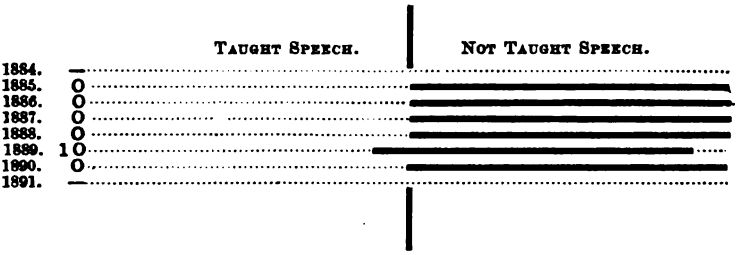
TEXAS.

Deaf, Dumb, and Blind Institution for Colored Youths, Austin, Tex.



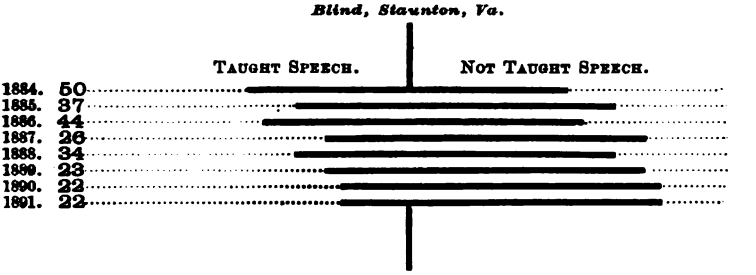
UTAH.

Utah School for the Deaf, Salt Lake City, Utah.



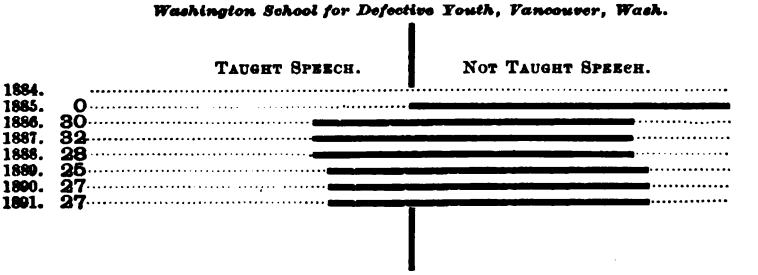
VIRGINIA.

Virginia Institution for the Education of the Deaf and Dumb and of the Blind, Staunton, Va.



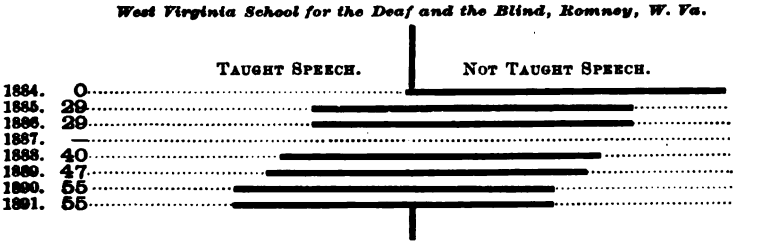
WASHINGTON.

Washington School for Defective Youth, Vancouver, Wash.



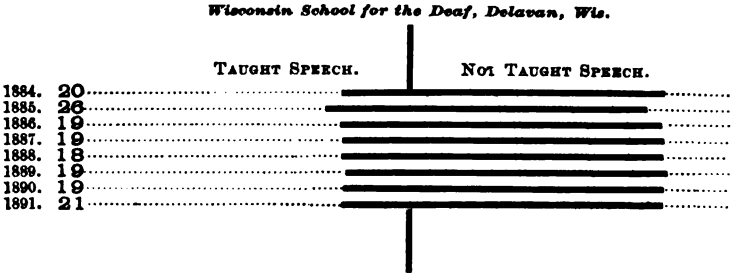
WEST VIRGINIA.

West Virginia School for the Deaf and the Blind, Romney, W. Va.



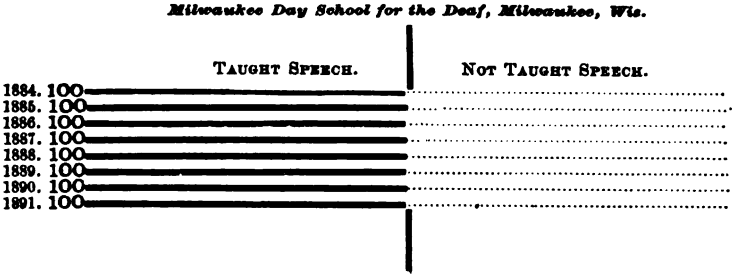
WISCONSIN.

Wisconsin School for the Deaf, Delavan, Wis.



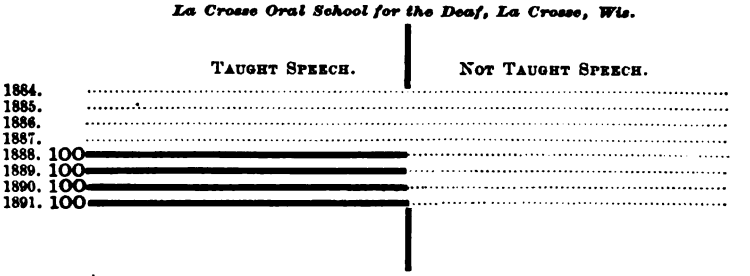
WISCONSIN.

Milwaukee Day School for the Deaf, Milwaukee, Wis.



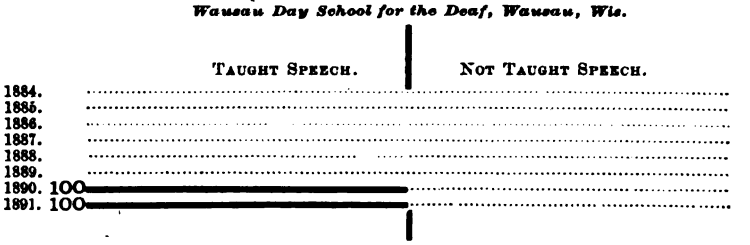
WISCONSIN.

La Crosse Oral School for the Deaf, La Crosse, Wis.



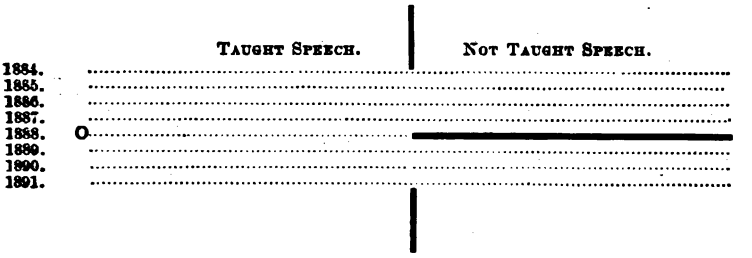
WISCONSIN.

Wausau Day School for the Deaf, Wausau, Wis.



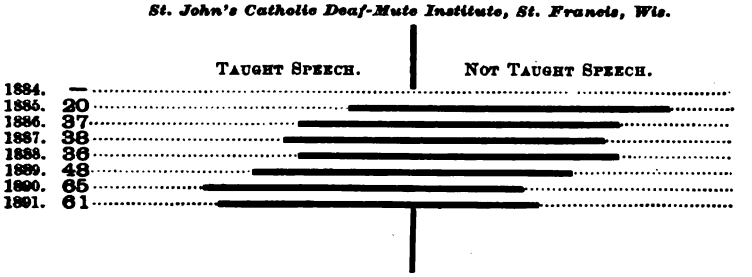
WISCONSIN.

Frentz School for the Deaf, Oshkosh, Wis.



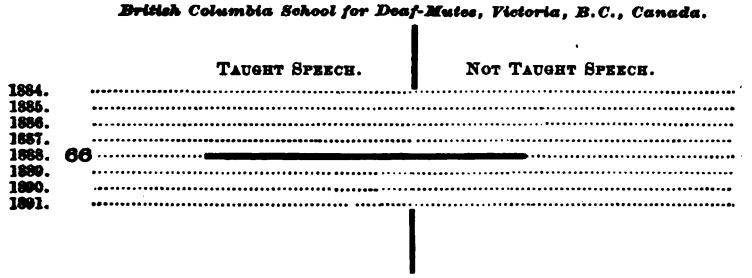
WISCONSIN.

St. John's Catholic Deaf-Mute Institute, St. Francis, Wis.



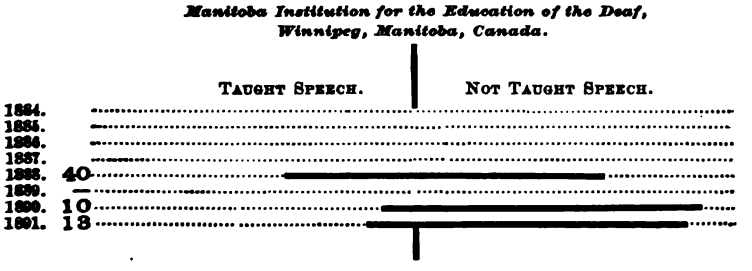
BRITISH COLUMBIA.

British Columbia School for Deaf-Mutes, Victoria, B.C., Canada.



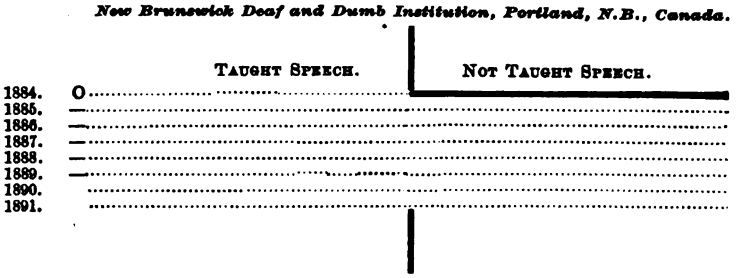
MANITOBA.

Manitoba Institution for the Education of the Deaf, Winnipeg, Manitoba, Canada.



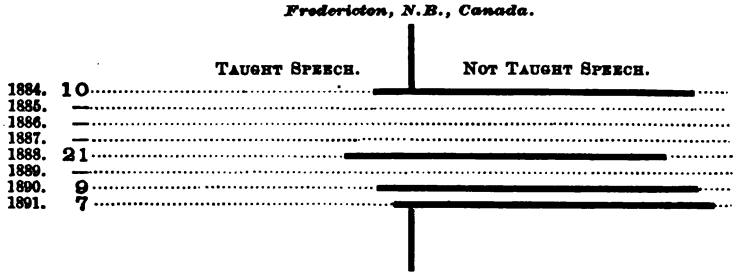
NEW BRUNSWICK.

New Brunswick Deaf and Dumb Institution, Portland, N.B., Canada.



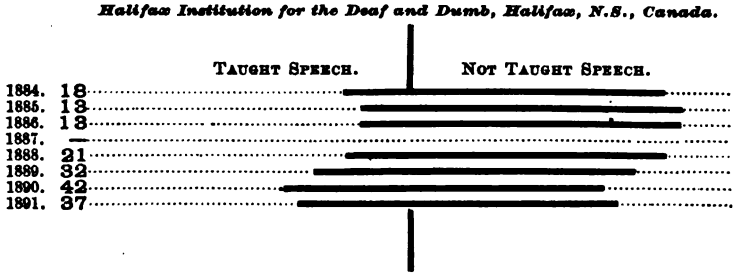
NEW BRUNSWICK.

Fredericton Institution for the Education of the Deaf and Dumb, Fredericton, N.B., Canada.



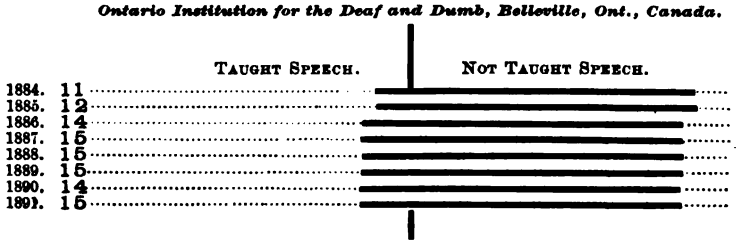
NOVA SCOTIA.

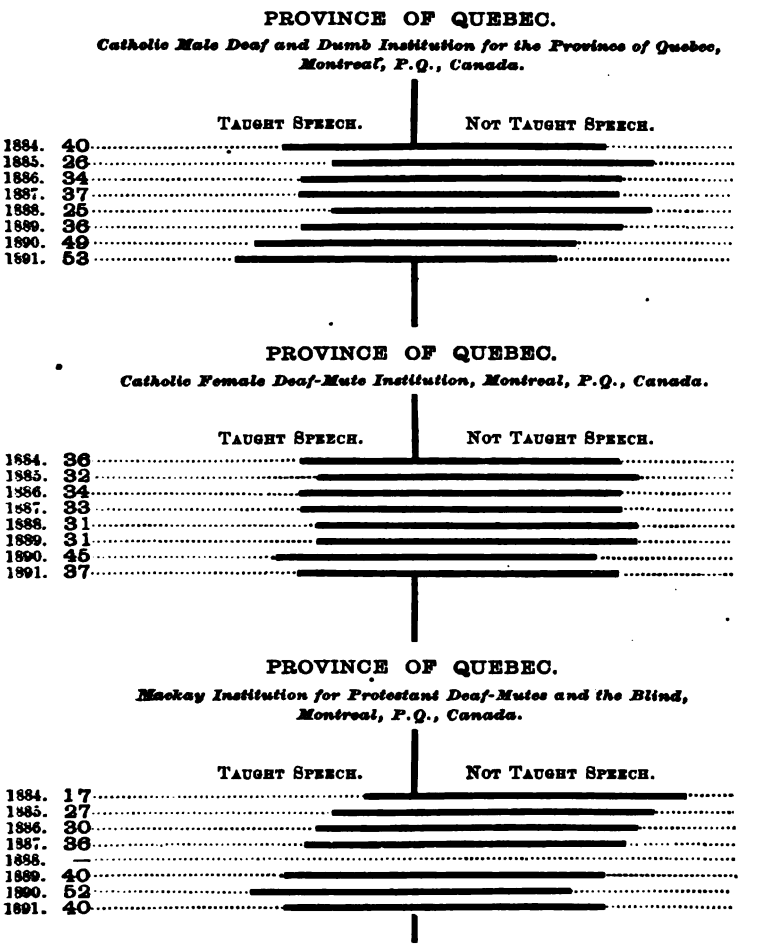
Halifax Institution for the Deaf and Dumb, Halifax, N.S., Canada.



ONTARIO.

Ontario Institution for the Deaf and Dumb, Belleville, Ont., Canada.





The following tables show the figures upon which the foregoing percentages have been based:

ALABAMA.

Alabama Institute for the Deaf,

TALLADEGA, ALA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	53	0	5	–
1885	65	13	6	–
1886	74	15	6	1
1887	60	10	6	1
1888	66	–	7	2
1889	90	20	8	2
1890	104	24	8	2
1891	103	22	6	2

ARKANSAS.

Arkansas Deaf-Mute Institute,

LITTLE ROCK, ARK.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	73	23	6	–
1885	91	64	6	–
1886	112	37	7	1
1887	122	34	8	1
1888	132	32	8	1
1889	131	30	9	1
1890	140	28	9	1
1891	152	34	10	1

CALIFORNIA.

California Institution for the Education of the Deaf and Dumb and the Blind,

BERKELEY, CAL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	135	35	9	–
1885	138	38	9	–
1886	137	40	10	1
1887	143	36	9	1
1888	147	40	11	2
1889	145	46	11	2
1890	158	68	11	2
1891	158	68	11	2

COLORADO.

Colorado School for the Deaf and the Blind,

COLORADO SPRINGS, COL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	43	12	4	–
1885	45	9	4	–
1886	44	15	5	–
1887	48	15	6	1
1888	68	15	7	1
1889	72	16	8	1
1890	83	30	8	2
1891	91	50	6	1

CONNECTICUT.

American Asylum for the Education and Instruction of the Deaf and Dumb,

HARTFORD, CONN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	211	45	15	–
1885	204	48	16	–
1886	185	60	17	2
1887	180	85	15	3
1888	157	82	15	4
1889	160	91	16	4
1890	154	94	15	3
1891	171	121	16	4

CONNECTICUT.

Whipple's Home School for the Deaf,

MYSTIC, CONN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	12	12	2	–
1885	12	12	2	–
1886	17	17	4	4
1887	20	20	4	4
1888	18	18	4	4
1889	25	25	3	3
1890	23	23	3	3
1891	28	28	4	4

DISTRICT OF COLUMBIA.

Kendall School for the Deaf,

(Primary Department of the Columbia Institution for the Deaf and Dumb)

WASHINGTON, D.C.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	65	43	6	–
1885	73	48	6	–
1886	69	45	5	2
1887	82	45	6	1
1888	70	40	6	2
1889	67	34	6	1
1890	58	34	6	1
1891	67	34	7	2

DISTRICT OF COLUMBIA.

National Deaf-Mute College,

(Collegiate Department of the Columbia Institution for the Deaf and Dumb)

WASHINGTON, D.C.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	54	0	9	–
1885	48	0	9	–
1886	59	0	9	0
1887	60	0	9	0
1888	68	0	9	0
1889	65	0	9	0
1890	71	0	9	0
1891	66	63	19	10

DISTRICT OF COLUMBIA.

Mr. Bell's Private School for Deaf Children,

WASHINGTON, D.C.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	5	5	2	–
1885	6	6	3	–
1886				
1887				
1888				
1889				
1890				
1891				

FLORIDA.

The Florida Blind and Deaf-Mute Institute,

ST. AUGUSTINE, FLA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	–	–	–	–
1885	8	5	2	–
1886	8	5	2	–
1887	13	6	2	1
1888	16	11	3	2
1889	16	11	3	2
1890	18	10	2	1
1891	39	34	4	2

GEORGIA.

Georgia Institution for the Education of the Deaf and Dumb,

CAVE SPRING, GA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	103	10	6	–
1885	90	7	7	–
1886	98	10	7	0
1887	90	–	7	0
1888	88	4	7	0
1889	103	3	7	0
1890	103	3	7	0
1891	103	–	8	1

ILLINOIS.

Illinois Institution for the Education of the Deaf and Dumb,

JACKSONVILLE, ILL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	580	150	31	–
1885	584	150	31	–
1886	563	150	31	5
1887	564	170	32	5
1888	588	170	32	5
1889	560	217	33	6
1890	572	225	34	6
1891	595	275	35	8

ILLINOIS.

Chicago Deaf-Mute Day Schools,

CHICAGO, ILL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	57	–	6	–
1885	45	10	6	–
1886	47	11	6	1
1887	48	12	6	2
1888	48	12	6	2
1889	48	12	6	2
1890	35	12	6	1
1891	35	12	6	1

ILLINOIS.

The McCowen Oral School for Young Deaf Children,

ENGLEWOOD (CHICAGO), ILL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	20	20	3	–
1885	23	23	5	–
1886	30	30	7	7
1887	27	27	6	5
1888	25	25	5	5
1889	25	25	5	5
1890	25	24	6	5
1891	32	31	8	8

ILLINOIS.

Ephpheta School for the Deaf,

CHICAGO, ILL.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887	–	–	–	–
1888	47	23	4	1
1889	46	30	4	3
1890	58	58	4	3
1891	75	70	6	4

INDIANA.

Indiana Institution for the Education of the Deaf and Dumb,

INDIANAPOLIS, IND.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	374	45	18	–
1885	374	60	18	–
1886	372	58	20	1
1887	352	60	20	1
1888	347	40	19	1
1889	348	80	19	2
1890	355	84	17	1
1891	342	68	21	1

INDIANA.

Evansville Public School for the Deaf,

EVANSVILLE, IND.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886	23	4	2	0
1887	25	0	2	0
1888	25	0	2	0
1889	24	0	2	0
1890	30	0	2	0
1891	28	–	2	0

IOWA.

Iowa Institution for the Education of the Deaf and Dumb,

COUNCIL BLUFFS, IOWA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	290	–	19	–
1885	285	70	15	–
1886	292	42	15	–
1887	309	44	18	1
1888	309	44	18	1
1889	331	10	18	1
1890	309	25	18	2
1891	309	25	18	2

IOWA.

Eastern Iowa School for the Deaf,

DUBUQUE, IOWA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889	16	0	1	0
1890	15	0	1	0
1891	5	0	1	0

KANSAS.

Kansas Institution for the Education of the Deaf and Dumb,

OLATHE, KAN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	191	32	11	–
1885	225	50	14	–
1886	239	60	14	1
1887	235	70	17	2
1888	253	49	17	1
1889	266	55	17	1
1890	264	40	18	1
1891	270	54	18	1

KENTUCKY.

Kentucky Institute for Deaf-Mutes,
DANVILLE, KY.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	152	17	11	–
1885	161	16	12	–
1886	190	18	12	1
1887	194	20	13	1
1888	179	12	13	1
1889	201	22	14	1
1890	218	23	14	1
1891	237	81	16	2

LOUISIANA.

Louisiana School for the Deaf,
BATON ROUGE, LA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	43	–	4	–
1885	–	–	–	–
1886	–	–	–	–
1887	–	–	–	–
1888	–	–	–	–
1889	–	–	–	–
1890	79	14	5	1
1891	127	29	5	1

LOUISIANA.

New Orleans Public School for Deaf-Mutes,
NEW ORLEANS, LA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886	16	0	1	0
1887	9	0	1	0
1888	10	0	1	0
1889	8	0	1	0
1890	8	0	1	0
1891				

LOUISIANA.

Catholic Institution for the Deaf and Dumb,
CHINCHUBA, MANDEVILLE, LA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890				
1891	8	0	6	0

MAINE.

Portland School for the Deaf,

PORTLAND, ME.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	45	45	5	–
1885	46	46	5	–
1886	53	53	6	6
1887	53	53	6	6
1888	53	53	6	6
1889	50	50	6	6
1890	50	50	6	6
1891	51	51	6	6

MARYLAND.

Maryland School for the Deaf,

FREDERICK, MD.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	112	71	10	–
1885	110	70	10	–
1886	112	65	10	2
1887	114	67	10	2
1888	114	66	10	2
1889	105	55	10	2
1890	106	54	10	2
1891	107	54	10	2

MARYLAND.

Maryland School for Colored Blind and Deaf,

BALTIMORE, MD.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	20	–	2	–
1885	19	–	2	–
1886	17	9	3	–
1887	–	–	–	–
1888	24	17	3	1
1889	23	0	2	0
1890	22	0	6	0
1891	18	–	4	0

MARYLAND.

Mr. Knapp's Institute,

BALTIMORE, MD.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	–	–	–	–
1885	–	–	–	–
1886	–	–	–	–
1887	–	–	–	–
1888	28	28	4	4
1889	28	28	4	4
1890	–	–	–	–
1891	–	–	–	–

MASSACHUSETTS.

Clarke Institution for Deaf-Mutes,

NORTHAMPTON, MASS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	111	111	13	–
1885	106	106	13	–
1886	104	104	13	13
1887	108	108	14	14
1888	117	117	14	14
1889	123	123	14	14
1890	121	121	14	14
1891	128	128	14	14

MASSACHUSETTS.

Horace Mann School,

BOSTON, MASS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	92	92	9	–
1885	91	91	9	–
1886	87	87	9	9
1887	87	87	9	9
1888	89	89	9	9
1889	97	97	10	10
1890	97	97	10	10
1891	103	103	11	11

MASSACHUSETTS.

New England Industrial School for Deaf-Mutes,

BEVERLY, MASS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	20	9	2	–
1885	21	13	2	–
1886	22	13	3	1
1887	24	16	2	1
1888	22	14	3	1
1889	32	20	3	1
1890	32	23	3	1
1891	28	20	2	1

MASSACHUSETTS.

Sarah Fuller Home for Little Children who Cannot Hear,

WEST MEDFORD, MASS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation
1884				
1885				
1886				
1887				
1888	12	12	1	1
1889	13	13	3	3
1890	11	11	4	1
1891	13	13	4	4

MICHIGAN.

Michigan School for the Deaf,

FLINT, MICH.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	310	41	16	–
1885	321	85	18	–
1886	334	61	18	1
1887	297	60	18	1
1888	333	70	19	1
1889	347	60	19	2
1890	338	50	18	1
1891	345	65	19	2

MICHIGAN.

German Lutheran Deaf and Dumb Institute,

NORTH DETROIT, WAYNE CO., MICH.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	40	40	3	–
1885	40	40	3	–
1886	36	36	3	3
1887	37	37	3	3
1888	39	39	3	3
1889	47	47	3	3
1890	44	44	3	3
1891	50	50	3	3

MINNESOTA.

Minnesota School for the Deaf,

FARIBAULT, MINN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	148	33	10	–
1885	164	40	11	–
1886	157	40	9	1
1887	165	34	10	2
1888	174	68	10	2
1889	189	87	10	2
1890	231	65	11	2
1891	242	100	12	2

MINNESOTA.

St. Mary's Institute for Deaf-Mutes,

ST. PAUL, MINN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	–	–	–	–
1889	37	37	2	2
1890	38	34	3	3
1891	47	40	4	4

MISSISSIPPI.

Mississippi Institution for the Education of the Deaf and Dumb,

JACKSON, MISS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	88	25	6	–
1885	100	30	6	–
1886	90	20	7	1
1887	91	25	7	1
1888	85	30	7	1
1889	90	24	7	1
1890	99	16	8	1
1891	93	15	7	1

MISSOURI.

Missouri School for the Deaf and Dumb,

FULTON, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	248	70	13	–
1885	261	60	13	–
1886	240	53	13	2
1887	259	64	13	2
1888	281	73	13	2
1889	297	63	16	2
1890	327	83	18	2
1891	336	80	18	2

MISSOURI.

St. Louis Day-School for the Deaf,

ST. LOUIS, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	46	–	3	–
1885	45	–	3	–
1886	54	–	3	0
1887	53	–	3	0
1888	47	0	3	0
1889	42	–	2	0
1890	34	0	2	0
1891	42	35	3	1

MISSOURI.

St. Joseph's Deaf-Mute Institute,

HANNIBAL, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	21	–	3	–
1885	22	9	1	–
1886	22	9	1	–
1887	–	–	–	–
1888	–	–	–	–
1889	–	–	–	–
1890				
1891				

MISSOURI.

Miss Parker's School for the Deaf,

ST. LOUIS, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890	10	10	1	1
1891				

MISSOURI.

Maria Consilia Deaf-Mute Institute,

ST. LOUIS, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885	–	–	–	–
1886	23	10	3	1
1887	26	3	3	1
1888	32	8	3	1
1889	30	11	3	1
1890	37	37	5	1
1891	45	36	4	3

MISSOURI.

Miss Kugler's School for the Deaf,

ST. LOUIS, MO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890				
1891	5	5	1	1

NEBRASKA.

Nebraska Institute for the Deaf and Dumb,

OMAHA, NEB.

DATE.	PUPILS		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	129	27	8	–
1885	123	30	9	–
1886	118	26	8	2
1887	121	25	9	2
1888	139	48	9	2
1889	129	31	9	2
1890	142	47	10	4
1891	151	55	11	4

NEW JERSEY.

New Jersey School for the Deaf,
TRENTON, N.J.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	110	31	7	–
1885	119	22	7	–
1886	119	22	7	–
1887	117	33	7	2
1888	116	–	6	0
1889	117	37	8	2
1890	134	–	9	1
1891	138	45	9	4

NEW MEXICO.

New Mexico School for the Deaf and Dumb,
SANTA FÉ, N.M.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Art.culation.
1884				
1885	–	–	–	–
1886	5	0	1	0
1887	5	0	1	0
1888	8	0	1	0
1889	8	0	1	0
1890	9	0	1	0
1891	7	–	1	0

NEW YORK.

New York Institution for the Instruction of the Deaf and Dumb,
NEW YORK, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	419	–	16	–
1885	414	–	16	–
1886	413	–	15	–
1887	391	391	17	–
1888	377	377	18	8
1889	365	365	14	8
1890	350	350	15	8
1891	342	335	16	8

NEW YORK.

Le Couteulx St. Mary's Institution for the Improved Instruction of Deaf-Mutes,
BUFFALO, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	160	90	11	–
1885	150	100	11	–
1886	150	100	11	–
1887	158	100	12	4
1888	157	145	12	10
1889	164	150	12	10
1890	158	145	12	10
1891	141	136	12	11

NEW YORK.

Institution for the Improved Instruction of Deaf-Mutes,
NEW YORK, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	184	184	15	–
1885	182	182	15	–
1886	198	198	15	15
1887	194	194	15	15
1888	207	207	19	14
1889	213	213	15	15
1890	214	214	20	20
1891	223	223	21	21

NEW YORK.

St. Joseph's Institute for the Improved Instruction of Deaf-Mutes,
FORDHAM, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	262	262	20	–
1885	271	271	19	–
1886	271	271	19	–
1887	297	209	21	21
1888	314	314	20	19
1889	296	296	21	20
1890	311	311	21	20
1891	347	304	24	24

NEW YORK.

Central New York Institution for Deaf-Mutes,
ROME, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	166	–	12	–
1885	164	15	12	–
1886	170	18	12	1
1887	165	28	13	1
1888	170	20	12	1
1889	160	37	12	1
1890	156	156	10	4
1891	162	150	11	2

NEW YORK.

Western New York Institution for Deaf-Mutes,
ROCHESTER, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	175	140	14	–
1885	179	179	14	–
1886	188	150	14	7
1887	190	156	20	8
1888	176	176	19	8
1889	166	166	19	5
1890	171	171	15	5
1891	167	167	15	5

NEW YORK.

Northern New York Institution for Deaf-Mutes,

MALONE, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	25	4	3	–
1885	37	7	4	–
1886	56	13	5	1
1887	69	18	6	1
1888	74	20	6	1
1889	74	12	6	1
1890	89	18	6	1
1891	95	28	7	1

NEW YORK.

Miss Keeler's Articulation Class for Deaf-Mutes,

NEW YORK, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887	–	–	–	–
1888	11	11	2	2
1889	12	12	2	2
1890	12	12	2	2
1891	11	11	2	2

NEW YORK.

Albany Home School for the Oral Instruction of the Deaf,

ALBANY, N.Y.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889	3	3	1	1
1890	7	7	2	2
1891	10	10	2	2

NEW YORK.

Warren Articulation School,

(Private)

243 W. 21ST ST., NEW YORK CITY.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890				
1891	15	15	4	4

NORTH CAROLINA.

North Carolina Institution for the Deaf and Dumb and the Blind,
RALEIGH, N.C.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	114	–	10	–
1885	125	25	8	–
1886	125	25	8	–
1887	127	15	8	1
1888	137	12	8	1
1889	137	12	8	1
1890	132	14	8	1
1891	149	12	9	1

NORTH DAKOTA.

School for the Deaf of North Dakota,
DEVIL'S LAKE, NO. DAK.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890	17	0	2	0
1891	36	8	3	1

OHIO.

Ohio Institution for the Education of the Deaf and Dumb,
COLUMBUS, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	476	100	26	–
1885	458	80	26	–
1886	447	–	26	2
1887	470	100	24	2
1888	472	100	26	2
1889	495	120	27	3
1890	471	122	25	2
1891	451	125	26	2

OHIO.

Cincinnati Public School for the Deaf,
CINCINNATI, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	36	0	2	–
1885	36	0	2	–
1886	39	0	2	0
1887	35	0	2	0
1888	21	0	2	0
1889	13	0	1	0
1890	13	0	1	0
1891	11	–	1	0

OHIO.

Cincinnati Oral School for the Deaf,

CINCINNATI, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886	7	7	2	2
1887	16	16	2	–
1888	18	18	2	2
1889	20	20	2	2
1890	20	20	3	2
1891	30	30	4	4

OHIO.

Toledo Deaf-Mute School,

TOLEDO, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890	17	0	1	0
1891	17	–	1	0

OHIO.

Cincinnati Catholic School for Deaf-Mutes,

CINCINNATI, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887	–	–	–	–
1888	25	–	2	–
1889	20	–	2	–
1890	20	–	2	–
1891				

OHIO.

Notre Dame Female School for the Deaf,

CINCINNATI, OHIO.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890				
1891	8	8	2	2

OREGON.

Oregon School for Deaf-Mutes,
SALEM, ORE.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	29	0	3	–
1885	29	0	3	–
1886	28	3	3	0
1887	31	5	3	–
1888	31	9	3	1
1889	34	7	3	1
1890	30	10	4	1
1891	43	18	3	1

PENNSYLVANIA.

Pennsylvania Institution for the Deaf and Dumb,
PHILADELPHIA, PENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	447	172	33	–
1885	466	143	34	–
1886	502	155	36	14
1887	504	140	36	13
1888	494	120	37	13
1889	478	120	37	13
1890	494	118	37	13
1891	490	130	38	14

PENNSYLVANIA.

Western Pennsylvania Institution for the Instruction of the Deaf and Dumb,
EDGEWOODVILLE, PENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	124	17	8	–
1885	145	29	9	–
1886	174	27	11	1
1887	178	33	12	1
1888	180	33	11	1
1889	197	28	11	1
1890	194	30	12	1
1891	211	50	13	2

PENNSYLVANIA.

Pennsylvania Oral School for the Deaf,
SCRANTON, PENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	20	20	2	–
1885	18	18	1	–
1886	18	18	1	1
1887	24	24	2	2
1888	36	36	3	3
1889	42	42	4	4
1890	53	53	5	5
1891	53	53	5	5

PENNSYLVANIA.

Miss Mary Garrett's School for Deaf Children,

PHILADELPHIA, PENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	8	8	1	–
1885	12	12	2	2
1886	16	16	2	2
1887	15	15	2	2
1888				
1889				
1890				
1891				

PENNSYLVANIA.

Home for the Training in Speech of Deaf Children before they are of School Age.

PHILADELPHIA, PENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890				
1891	20	20	–	–

RHODE ISLAND.

Rhode Island School for the Deaf,

PROVIDENCE, R.I.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	29	29	3	–
1885	32	30	4	–
1886	32	32	4	4
1887	36	36	5	5
1888	33	33	5	5
1889	31	30	5	5
1890	41	41	5	5
1891	42	42	5	5

SOUTH CAROLINA.

South Carolina Institution for the Education of the Deaf and Dumb and the Blind,

CEDAR SPRING, S.C.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	59	11	5	–
1885	67	13	4	–
1886	74	15	4	1
1887	72	25	5	2
1888	81	28	5	2
1889	74	23	6	2
1890	81	20	7	2
1891	91	26	7	2

SOUTH DAKOTA.

Dakota School for Deaf-Mutes,

SIOUX FALLS, SO. DAK.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	33	0	2	–
1885	36	0	2	–
1886	40	4	3	–
1887	45	14	5	1
1888	44	13	5	2
1889	51	16	5	1
1890	51	16	5	1
1891	47	18	4	1

TENNESSEE.

Tennessee Deaf and Dumb School,

KNOXVILLE, TENN.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	153	15	7	–
1885	148	13	8	–
1886	150	10	8	1
1887	151	11	8	1
1888	164	13	8	1
1889	187	16	9	1
1890	191	20	9	1
1891	188	110	9	1

TEXAS.

Texas Deaf and Dumb Asylum,

AUSTIN, TEX.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	129	25	10	–
1885	146	33	9	–
1886	148	25	10	1
1887	158	34	10	1
1888	174	34	12	1
1889	195	39	11	1
1890	212	49	13	1
1891	229	50	13	1

TEXAS.

Deaf, Dumb, and Blind Institution for Colored Youths,

AUSTIN, TEX.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	28	5	3	1
1889	35	–	3	–
1890	40	5	3	1
1891	39	5	3	0

UTAH.

Utah School for the Deaf,

SALT LAKE CITY, UTAH.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	–	–	–	–
1885	20	0	1	–
1886	20	0	2	0
1887	20	0	2	0
1888	35	0	2	0
1889	38	4	3	1
1890	43	0	3	0
1891	48	–	4	1

VIRGINIA.

Virginia Institution for the Education of the Deaf and Dumb and of the Blind,

STAUNTON, VA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	97	49	12	–
1885	98	36	11	–
1886	96	42	12	1
1887	96	25	12	1
1888	102	35	11	1
1889	106	25	10	1
1890	113	25	11	1
1891	113	25	11	1

WASHINGTON.

Washington School for Defective Youth,

VANCOUVER, WASH.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885	9	0	2	–
1886	20	6	3	1
1887	22	7	3	1
1888	25	7	3	1
1889	32	8	3	1
1890	33	9	3	2
1891	55	15	4	2

WEST VIRGINIA.

West Virginia School for the Deaf and the Blind,

ROMNEY, W. VA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	75	0	5	–
1885	76	22	6	–
1886	79	23	6	1
1887	68	–	6	1
1888	62	25	6	1
1889	82	39	6	1
1890	88	48	6	1
1891	91	50	7	1

WISCONSIN.

Wisconsin School for the Deaf,

DELAVAN, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	242	48	14	–
1885	231	61	14	–
1886	236	45	14	3
1887	249	48	15	3
1888	259	48	15	3
1889	226	44	15	3
1890	223	43	15	3
1891	210	45	16	3

WISCONSIN.

Milwaukee Day School for the Deaf,

MILWAUKEE, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	11	11	2	–
1885	25	25	3	–
1886	35	35	4	3
1887	37	37	6	6
1888	43	43	5	5
1889	44	44	6	6
1890	49	49	6	5
1891	39	39	6	6

WISCONSIN.

La Crosse Oral School for the Deaf,

LA CROSSE, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	5	5	1	1
1889	7	7	1	1
1890	8	8	1	1
1891	9	9	1	1

WISCONSIN.

Wausau Day School for the Deaf,

WAUSAU, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888				
1889				
1890	8	8	1	1
1891	6	6	1	1

WISCONSIN.

Frents School for the Deaf,

OSHKOSH, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	7	0	1	0
1889				
1890				
1891				

WISCONSIN.

St. John's Catholic Deaf-Mute Institute,

ST. FRANCIS, WIS.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	45	–	3	–
1885	45	9	3	–
1886	27	10	3	1
1887	21	8	3	2
1888	28	10	3	2
1889	27	13	3	2
1890	29	19	4	2
1891	38	23	4	2

BRITISH COLUMBIA.

British Columbia School for Deaf-Mutes,

VICTORIA, B.C., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	6	4	1	0
1889				
1890				
1891				

MANITOBA.

Manitoba Institution for the Education of the Deaf,

WINNIPEG, MANITOBA, CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884				
1885				
1886				
1887				
1888	10	4	1	1
1889	19	–	1	0
1890	30	3	3	1
1891	39	5*	4	1

NEW BRUNSWICK.

New Brunswick Deaf and Dumb Institution,

PORTLAND, N.B., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	32	0	2	–
1885	–	–	–	–
1886	–	–	–	–
1887	–	–	–	–
1888	–	–	–	–
1889	–	–	–	–
1890				
1891				

NEW BRUNSWICK.

Fredericton Institution for the Education of the Deaf and Dumb,

FREDERICTON, N.B., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	20	2	2	–
1885	17	–	2	–
1886	–	–	–	–
1887	–	–	–	–
1888	24	5	3	–
1889	–	–	–	–
1890	23	2	3	0
1891	27	2	4	0

NOVA SCOTIA.

Halifax Institution for the Deaf and Dumb,

HALIFAX, N.S., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	73	13	4	–
1885	74	10	5	–
1886	78	10	5	–
1887	75	–	5	0
1888	72	15	5	1
1889	72	23	5	2
1890	74	31	6	1
1891	72	27	6	1

ONTARIO.

Ontario Institution for the Deaf and Dumb,

BELLEVILLE, ONT., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	286	32	15	–
1885	284	33	15	–
1886	273	37	15	1
1887	264	39	15	1
1888	265	38	15	1
1889	274	40	15	1
1890	291	42	16	1
1891	296	43	15	1

PROVINCE OF QUEBEC.

Catholic Male Deaf and Dumb Institution for the Province of Quebec,

MONTREAL, P.Q., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	126	50	25	–
1885	117	30	27	–
1886	105	36	28	5
1887	107	40	28	5
1888	103	26	33	5
1889	112	40	32	5
1890	120	59	30	28
1891	113	60	30	7

PROVINCE OF QUEBEC.

Catholic Female Deaf-Mute Institution,

MONTREAL, P.Q., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	165	59	35	–
1885	185	60	35	–
1886	230	78	44	12
1887	228	75	39	10
1888	209	66	44	10
1889	209	66	44	10
1890	165	78	36	15
1891	196	72	38	15

PROVINCE OF QUEBEC.

Mackay Institution for Protestant Deaf-Mutes and the Blind,

MONTREAL, P.Q., CANADA.

DATE.	PUPILS.		TEACHERS.	
	Total.	Taught Speech.	Total.	Articulation.
1884	45	8	4	–
1885	45	12	4	–
1886	46	14	4	2
1887	50	18	4	2
1888	46	–	4	2
1889	40	16	4	2
1890	48	25	5	3
1891	50	20	5	3

Following the President's address, Dr. D. Greene, of the New York Institution for the Improved Instruction of the Deaf, delivered the first of his series of lectures on "How We Breathe." (The lecture is printed with the others of the series in the part of this report devoted to "Lectures.")

The following paper was read by Mr. Lyon:

SPEECH-READING IN THE ROCHESTER SCHOOL.

By Harriet E. Hamilton.

If the teaching of speech-reading in our schools, generally, is so meagre and unsystematic that our President can say, as he did at the first meeting of this Association, "Speech-reading is not taught in our schools," it behooves us, by study and comparison of methods, to find for our pupils the best means for the acquisition of this power, which is acknowledged throughout the profession to be more valuable to the deaf than even that of speech. Every deaf child has a right to be so taught that he may become as untrammelled as possible in his intercourse with the hearing world about him. For affairs press heavily upon most men who are bearing the responsibilities of life, and they seem to have hardly time for a leisurely consideration of their deaf brother. The means to be adopted by a school to give its pupils the readiest communication with their hearing friends must be determined, in a measure, by its methods.

We will not consider here the application of the principles of teaching speech-reading to the semi-mute, to the semi-deaf, or to persons whose hearing has been impaired or destroyed in adult life, but to those who are classed as congenitally deaf.

It is with children who, through the loss of one sense, are in a degree shut out from the world about them that we have mainly to do, and it is ours so to train their faculties that their lives may not be fettered with a feeling of irreparable deprivation, and so to develop their remaining senses that all may be able to say, with Mr. S. M. Eddy, of Auburn, "It is a very nice point; I can hardly tell whether I hear or not."

Certain natural endowments are essential to the highest degree of success in speech-reading. These we may not bestow, but we can, through the careful training of judgment and sight, impart the ability to carry on intercourse by means of speech and speech-reading.

If the methods of a school are such as to reach every individual so as to cultivate his powers of perception and observation,

to train his judgment, to give him ready command of vernacular language, and to furnish him opportunities for practice in reading spoken language, the elements of success as a speech-reader are placed in his hands.

Admitting that speech-reading is next in value to the language which is communicated through that medium, let us consider some means by which it can be acquired.

1st. All the communication of the deaf, so far as is compatible with their mental development and their attainment of a fluent use of English, should be carried on from the start by speech and speech-reading. (This point is beset with many difficulties, owing to the differences of opinion as to the best way of acquiring English.)

2d. During the first few months of instruction a portion of the time should be daily set aside for the cultivation of the powers of perception and observation.

3d. The child should acquire the habit, consciously or unconsciously, of looking for the thought rather than for the words. To this end phrases and sentences should be used from the start instead of detached elements or words. We believe that it is very important to have the early instruction in speech synthetic, rather than analytic, in its nature, so that it may become the habit of the child's mind to see phrases as wholes.

4th. The pupil should be taught what visible vocal adjustments are reliable and what are ambiguous.

The method of teaching Speech-reading at Rochester is in perfect harmony with the school's manual-oral system, which now includes the Lyon Phonetic Manual. This method, so far as it is peculiar to the school, is partly the result of careful study and partly the natural outgrowth of the manual-oral system, which, in the writer's opinion, imparts to the average deaf child the fullest and freest use of vernacular language.

A few children have been admitted to the school at the early age of three years, although the majority are older than that when they enter. Those under twelve years of age are placed in the kindergarten, where they are permitted to remain, if it is thought advisable, until they reach their twelfth year. During their stay in this department they devote one-half their time daily to speech, speech-reading and exercises bearing directly thereon. It is our purpose to lay the foundation for excellent attainment in speech-reading before the pupils are promoted to the senior building.

Following the example of the hearing mother with her children, we keep the simplest form of spoken language constantly

before the younger pupils. With the little ones of the lowest, or E class, grouped about her, one tiny hand resting upon her chest, the teacher reveals to their eager and attentive eyes simple English phrases and sentences, asking for the meantime only the response of interested attention.

"I love you," says the teacher, and it does not take the children long to realize that the child who catches the meaning of this succession of vanishing positions may run to the teacher and throw his arms about her neck. Then other short sentences follow, such as "Come to me," "Look at me," "Open the door," "What is the matter?" "Never mind," "That is too bad," etc.

Very simple and crude stories about the members of the class delight them before they are familiar with either the spelled or written form of most of the language used. Several boys are told to *stand*, and the teacher saying to the shortest, "Come to me," places her hand upon his head, saying "Eddie is a little boy," "He is not a large boy." Then pointing at his eyes and at something blue, she says, "Eddie's eyes are blue," "They are not brown," (pointing at the brown eyes of others in the class). Such exercises are continued for several days until the terms "Little girl," "Big boy," "Black eyes," "Yellow hair," and other kindred ones are readily recognized. The numerals are similarly taught. Pictures are fastened to the walls which suggest significant sentences for speech-reading.

A flower game has been devised which is the children's delight. This was introduced in the spring when the early plants and flowers were appearing. "Do you want to play flower?" the teacher asks, and all eagerly assent. Then she says, "Libbie, Mollie, Freddie, come to me." "Go to sleep," she continues, and all drop upon their knees and hang their heads. The teacher has a plant at hand and pointing to it says to the others of the class, "There are no flowers." Then, pointing to the children kneeling, she repeats, "There are no flowers." She then says, "Willie, water the plants," and Willie takes a watering can and pretends to do so. Ivalo is then told to water the plants. This time each bowed head is gently touched and all eyes are turned toward the teacher. "Wake up," she says and the little *plants* begin to yawn and stretch. Thus passing on through the stages of growth, the flowers at last appear. At this period cologne is sprayed upon each little face and the others are in turn bidden to "Smell of the flowers." Our bird game is hardly less popular, for the children like to "fly." In these exercises not only do the children understand the directions spoken by the teacher, but they try to imitate all that is said.

Out of the large supply of toy animals and other objects provided at the kindergarten, are chosen a few whose names when spoken have the greatest visibility and at the same time have a marked dissimilarity. The names of these furnish some of the first lessons in speech-reading. Later there are simple talks about them. From the first, the salutations "Good morning," "Good bye," etc., are used by the teacher whenever the children enter or leave the room.

No care is taken to give the speech-reading lessons in forms easy of utterance until a desire to imitate the speech of the teacher becomes manifest. Then phrases are introduced which the children can imitate, though, until the last year in the kindergarten, their speech-reading is far in advance of their speech, just as the hearing child's comprehension of language used by others exceeds his own powers of expression.

During the second year this line of work is amplified with the D class.

In the third year printed phrases and sentences are used with the class. Five of these are arranged upon a page, and are issued both in the form of single leaflets and of little books. A brief note to the teacher describes the manner of using them. Sentences and phrases are also printed upon cards which are used in the form of games. Other cards with pictures of objects upon them are utilized in a similar manner.

During the remaining years in the kindergarten the children improve rapidly in speech-reading. Each class has its own phrase-book, toys, games, and picture and sentence cards. Occasionally they have a game with vari-colored balls, in which, as in their other games, there is ample opportunity for speech-reading practice. They play "Come to see," "Go shopping," give "teas" with their dishes, etc. Journals and other exercises are dictated to them sentence by sentence, which they write upon the wall slate. At other times their phrase-book sentences are woven into conversation and stories.

When they are read to from books, care is taken that the language is neither too difficult nor too simple. The printed text is placed in their hands that they may see each sentence, first in the text, then on the teacher's lips. Sometimes a story of one or two pages, from a child's magazine or reader, is given them to read once through, then the books are closed and a conversation follows. The A class read thus during the past year a story of two pages about a little girl who found a bird in the grass and carried it home

to her mother, who cared for it until it was fully grown, and then let it fly away. During the conversation which followed, the teacher asked: "What would you do if you should find a bird in the grass?" The answers came, "I would get a ladder and put it into the nest," "I would take it home to my mamma," "I would try to climb the tree and reach the nest." The pupils graduating from the kindergarten enter the Fourth Grade of the Primary Department, or rather form the basis of it.

The Intermediate Department includes all the pupils who enter the school at the age of twelve or over. It is our purpose to have the pupils in this department accomplish in three years the five years' work of the Kindergarten, in order that they too may enter the Fourth Grade.

The exercises in the Intermediate Department, though conducted differently from those of the Kindergarten, have substantially the same scope,—salutations, common idiomatic phrases, time, seasons, food, number, place; names of officers, teachers, classmates, and friends; names of parts of the body, etc. The phrase book prepared for these three grades indicate but a small part of the Speech-reading work accomplished; they give the pupils many idioms of our language and furnish a basis for occasional contests and examinations.

The classes of the Primary Department, including the Fourth to the Ninth Grades, advance in most of the lines of work pursued during their early years. Number becomes arithmetic; body, physiology; place, geography; and there are exercises upon flowers, Natural History, and United States History. Conversation upon current news and stories is introduced. Only in the case of the semi-mutes or the semi-deaf do we expect recitations to be carried on by means of Speech and Speech-Reading in these grades, but the trend of the work is to prepare the pupils to recite orally upon entering the High Class and to depend upon Speech-reading in their communication with hearing people both in and out of school.

On entering the High Class two periods are devoted daily to Speech and Speech-reading. Special study is made of the confusion experienced by the Speech-reader because of the resemblance to the eye of words and sentences which are wholly dissimilar in meaning.

Professor A. Melville Bell's system of Line Writing, which furnishes a means of self-help to the Speech-reader, is now introduced in connection with a careful and critical study of the

visibility of speech. This can be made to represent quite clearly the obscurities of speech as presented to the eye and to illustrate the homonymous character of words and phrases, and is therefore the medium by which such exercises for evening study are given as will train the thought in the line of Speech-reading.

Outlines of words, phrases, or sentences, written as they appear to the eye, are distributed to the class and returned the following day written out in full. This emphasizes the comparative visibility of the several elements. The selection of the form, which judgment pronounces correct, out of all the combinations that are represented by the written characters, is a useful training in this direction; while the working out of these exercises leads the pupil to group properly those elements which are necessarily confused with one another.

The pupils are encouraged to carry a pocket note-book in which to write expressions that perplex them, together with the word or words with which they are confused, and to make lists of homonymous words and phrases. These lists, when collected and preserved, will constitute a most valuable source of reference.

A series of Speech-reading lessons with diagrams has been prepared for the school which describes the visible forms of the elements; classifies them according to their comparative visibility; and gives their different orthographic representations. Initial and terminal consonant combinations are arranged for practice, and exercises are introduced which enable the student, with the aid of a hand glass, to verify statements made in the lessons. A careful explanation is given of the mutations of the elements in rapid speech and of the modifying influences of certain elements upon others preceding or succeeding them.

Topics which are to be the basis of conversation for the following day, are given to the higher classes in General History, Literature, and Current News. We have also arranged for them a calendar of birthdays of prominent men and women, and another of notable events.

The highest grade have an exercise in the analysis of poetry. With the text book before them they follow the teacher's lips as she reads the poem, stanza by stanza. In the conversation which follows, unfamiliar words and phrases are mastered, figures of speech explained, and the thought is expressed by one and another in familiar phraseology. After this careful consideration, the poem if short is read through continuously and a pupil is called upon to

analzye it as a whole, state what he considers to be the author's object in writing it, and the lessons to be learned therefrom.

The most carefully prepared exercises and most earnest class-room work will avail little if we fail to impress upon the minds of the pupils the priceless value that the acquisition of Speech-reading will be to them in after years. We must follow our pupils into daily life to find if they are patiently and persistently practicing it. Ever seeking to promote the moral and mental development of our pupils, we should further contribute to their well-being in life by sending them forth from school untrammelled, so far as may be, in their intercourse with the hearing world. In striving to prepare our pupils to become self-respecting and self-supporting citizens and to fit them to further the happiness of others we shall win hearty co-operation if there is no pressure of personality, but rather a spirit of earnest devotion to the Great Master who is our Head and Teacher.

THE PRESIDENT: I think we are all specially interested in what emanates from the Rochester School. Since Miss Hamilton is not here to answer questions upon her paper it would be gratifying to the members of the Association if Mr. Lyon were to occupy the time and report progress in the use of the Lyon Phonetic Manual. I understand that the Lyon Phonetic Manual has been introduced into the Rochester School and the Illinois Institution, and lectures have been given upon the subject at the National College in Washington. We shall be very glad to have Mr. Lyon tell us a little about what has been done with his manual in the Rochester School.

MR. LYON: MR. PRESIDENT, LADIES AND GENTLEMEN: In the early part of this month and shortly after the dismissal of the school at Rochester, Dr. Bell visited that city and asked me to prepare a statement of the work that had been done there, with the Phonetic Manual during the past year. I had no intention of inflicting upon you at this meeting anything touching the Manual, but after his suggestions I sent a circular letter to the teachers and officers connected with the school, asking them to give me their experience during the past year.

I now purpose reading extracts from the letters which I received in response to my circular of inquiry. My statement will therefore not consist of my own testimony, but of portions of the testimony given by those who have had a very practical experience with the Manual, and hence are entitled to speak with regard to the matter. It is to be regretted that Prof. Westervelt was pre-

vented by his early departure for Europe from contributing to this statement.

The extreme brevity of some of these extracts is owing to the fact that an effort has been made to avoid the restatement of experiences which have been common to several teachers, as well as to the restriction of other cumulative testimony.

I will first read from the letters written by the kindergarten teachers, then from the letters written by the officers, and finally from the letters written by the teachers of the senior department.

[Mrs. Flora B. Willson, Teacher in Kindergarten until February, 1892.]

Your letter written the 18th inst., but mailed the 23d, reached me this morning. I appreciate the shortness of time between now and July 1st, and doubt if this finds you in Rochester. However, I will try this afternoon to imagine myself in my old room in the kindergarten at the Rochester Deaf-Mute Institution, and that a class in the Lyon Manual has just gone, leaving the room so permeated with the spirit of the cause—it were hard, indeed, *not* to tell its merits.

The two more advanced classes in the kindergarten, the A and B, used the Phonetic Manual, and we devoted to its study forty minutes of each day during the first five months of the past year. When we began, my own knowledge of the Manual was very limited and my use of it crude in the extreme, so I will say frankly, that the progress of the class was not what it might have been with greater wisdom to guide them. Neither did my *faith* accomplish anything, for, to be honest again, in the beginning *I had none.* But as the days passed results began to crop out here and there (in the A class first). New and untried words were undertaken with less hesitation, longer sentences ventured upon and self-correction and correction of each other by means of the Manual showed me its practicability and the possibilities of a thorough and persistent use of it. When *I* awoke, the class awoke and they did *good work.* The exercises were varied, sometimes conversation, sometimes reading, and at other times a simple story that I wrote on the wall-slate and spelled for them phonetically *once.* Afterwards they were allowed to spell it to themselves a few times and then required to speak it to me without hesitation. The desired results in all these exercises were rapidity, readiness and smoothness, and in none of these directions did they fail to make marked progress, possibly for the reason that it was their *especial need.* The B class was larger and one of unusual ability, but they had hidden their light and *would not* let it shine. The speech they had used was good, but they had used little. They "took" to the new Manual at once and learned it readily. Of course they always accompanied the positions of their hand with their lips, but for sometime I felt quite sure they were unconscious that they were "talking," and so—

almost before they knew it—they worked out of the old rut, surprising teachers and attendants by their readiness of speech. The great advantage to this class in using the Manual was, that it helped to give them confidence in themselves and enabled them to speak without fear. Of its use *out* of school I cannot say much, though I recall a number of incidents where children came to me to *speak* sentences which some other child had taught them to spell phonetically, or asked how to spell this or that word phonetically and what sounds the vowels had in certain words. Often when I was occupied for a short time with one member of the class, during a speech or speech-reading exercise, the others *voluntarily* filled the time by spelling phonetically.

My experience with the Manual was, of course, too limited to enable me to judge critically of its possibilities, but if its continued use proves as helpful as it gave promise of being I shall consider it an invaluable aid in teaching speech to the deaf.

[From Mrs. Willson's Article in "The Daily Paper for Our Little People," for January 30, 1892.]

While the Phonetic Manual is a *help* to pupils in learning to speak *single words*, its *greatest* power seems to come as they begin to speak more connectedly. To one who has watched them as they begin to *think* spoken sentences and to accompany the positions of the hand with their lips, the process is intensely interesting. The Manual seems to be to them what the lattice is to the vine, something tangible to which they may cling and feel secure. Little children will look with doubting faces and shaking heads at a short story that is given them to speak for the first time, but let it be spelled to them phonetically only once, and they will begin spelling and speaking, unconsciously over-lapping sounds and speaking with ease and naturalness.

[Miss Rose H. Halpen, Teacher in Kindergarten.]

I have employed the Manual quite frequently, both in and out of the classroom in talking to the pupils. The chief use to which I have put the Manual has been to use it in explaining to the children how words rhyme in poetry. The A Class have read quite a good deal of poetry with me during the year, and I find the Manual very helpful in the way I have mentioned. I think I should hardly have been able to give them an idea of rhyme without the aid of the Manual.

The actual benefits of the system are the aid it gives the children in the enjoyment of poetry, the ease with which the teacher can give the pronunciation of a word to a pupil, and the habit which pupils accustomed to its use acquire of bearing in mind the pronunciation of words. It helps them to understand the writing or spelling of illiterate persons who are liable to spell phonetically.

I know of no disadvantages arising from the system.

[Miss Helene Newman, Teacher in Kindergarten.]

Whenever a mistake occurs in the pronunciation of a word, I ask the pupil to spell it phonetically, and when he is able to do this it always corrects the error. During our walks, visits to the greenhouses, in our games and amusements on Saturdays and in our Bible studies on Sundays new words are constantly occurring, which the Phonetic Manual at once makes easy to speak.

In Speech-reading exercises the A and B classes use the Phonetic Manual entirely in place of the manual alphabet and they speak at the same time, thus gaining, by the critical study of speech positions on the hand, simultaneously with their careful vocalization, fluent accuracy in articulation.

[Miss Margaret S. McGill, Teacher in Kindergarten.]

I will say that I have noticed marked improvement in the speech of our pupils this year, and the children have used speech more freely in the schoolroom.

[Miss Mary Alice Moonie, Supervisor of the Older Girls.]

All the actual knowledge I have of the help which my girls receive from the Manual is in regard to pronunciation, and I can truly say that it is a *wonderful* help in that way, and that the use of it outside of the class-room, although not general, is increasing.

[Miss Lillian P. Bliven, Supervisor of Kindergarten Boys.]

My little boys are very fond of using the Lyon Manual, and will drop their play at any time if any one offers to talk with them by means of it. I have noticed that the older pupils speak much more plainly since the teachers began to use this Manual in the school, and many of the smallest boys whose custom it was to spell "good night" to me have gotten so they can *speak* the words very distinctly; the same with "good morning" and "good bye," etc.

[Miss Louise C. Morgan, Supervisor of Kindergarten Girls.]

I am very glad to add my testimony to that of our teachers as to the practical benefits of your Manual. During the four years I have been connected with the kindergarten I have never seen so much interest manifested in speech as has been shown since the pupils began using the Lyon Phonetic Manual. Hardly a day passes that some child does not ask about the pronunciation of a word, and when this is given phonetically, the child pronounces it correctly. As a means of entertainment out of school, it is the one thing of which they never tire. I have seen them sit for hours quite unconscious of the flight of time,, and the ease with which their errors in speech are corrected by its use surely proves its value.

[Miss Minnie C. Taber, Book-keeper.]

My principal opportunity for observing the Lyon Manual has been in the dining-room. At breakfast time the pupils spend fifteen

minutes in Bible study, and during the last half of the year very many of the older pupils have recited their lessons by the Phonetic Manual. Nearly every morning I have been asked to give the pronunciation of several words, and when they were spelled phonetically pupils never failed to pronounce them correctly. Table conversation also was carried on by means of the Phonetic Manual by nearly half the pupils. The more advanced pupils have taken great interest in teaching the little children in the E class, and although this class have had no training in the class-room, all of them have learned to spell several sentences in this way.

[Miss Lucy B. McMaster, Teacher in Senior Department.]

I have incidentally taught the Phonetic Manual to, or used it with, all the grades that I have had during the year, with very pleasing results. In the first grade August Lenst spells as rapidly as most people can read, and it seems to have helped him in the use of language as well as in speech. Most of my pupils use it in the class-room; some use it quite freely.

Pupils acquire the habit of thinking speech.

They learn to give the sound correctly.

They are easily taught to pronounce new words.

The older pupils who are familiar with the Manual are in the habit of correcting the others out of school hours.

The Phonetic Manual is very helpful in correcting the pronunciation of words which are spoken correctly, with the exception of a single sound. If the teacher assumes the position for the sound on the hand while she calls upon the pupil to repeat the phrase, the error is immediately corrected.

[Miss Amy Hodges, Teacher in Senior Department.]

Both in and out of the class-room the pupils use the Phonetic Manual with eagerness. Frequently in recitation they unconsciously use the Phonetic Manual instead of the ordinary manual. I should say that those who have used the Manual with the most faithfulness have made the most marked improvement in the quality of their speech.

[Miss Louisa C. Magher, Teacher in Senior Department.]

Out of the class-room I have carried on conversation in the Phonetic Manual with the girls, and at morning prayers have listened to recitations of the Psalms. Knowing them well it was not difficult to follow the one who was reciting.

The actual benefits of the system are: Confidence in the use of the Manual has resulted in an increased desire to use the vocal organs; in greater confidence in one's power of speech; and in smoother and more accurate speech.

[Miss C. D. Wood, Teacher in Senior Department.]

The pupils of the tenth grade have been especially interested in the Lyon Manual. In this one class have been observed the

following results: Ellie Humphrey's speech was so thick that it was impossible to understand anything but the most common, simple words. She has used the Lyon Manual constantly, spelling all words she could not speak readily. The spelling has emphasized the fact that correct pronunciation is not mere guesswork, but follows certain fixed laws of phonetics. Her ordinary conversation has become much clearer, and she has gained confidence in speech.

John Francis, by using the Lyon Manual as he spoke, has been helped to pronounce words clearly and smoothly, much to his own comfort and satisfaction.

Addie Rich has made a most careful study of the Manual. Whenever a word troubled her she consulted the dictionary and then spelled it phonetically until she was familiar with it. She has gained great confidence in the correctness of her speech.

When these pupils have once mastered the pronunciation of any word by the aid of this Manual, they have not so often forgotten as they did before they had the Manual. Using the Manual I have been able to conduct the recitations of this class wholly by speech, and I am convinced that it is the greatest aid to speech that has ever been given to the deaf.

[Miss Caroline C. Christian, Teacher in Senior Department.]

The grades that I have taught were perfectly familiar with the Manual before I became their teacher, and used it, for the most part, with fluency. I used it in the speech classes for the correction of imperfect pronunciation of sounds and always found it available.

The Manual was frequently used voluntarily both in and out of my classroom. The children enjoyed spelling in this way. As often as seemed practicable I allowed one of the semi-mutes to spell the sentences of the lesson phonetically to the members of the class, who, in turn, spoke them to me. This was regarded as a treat, and was of value, not only because of the interest, but because of the firm belief on the part of the children that the new manual would help them in what they so much desired—speech.

The boys of the eighth grade were accustomed to bring to class words that they had met with in their reading that were difficult of pronunciation. After the pronunciation had been written on the slate, as given by Soule and Wheeler, they always, of themselves, spelled phonetically, as if in some way that was an aid in fixing the pronunciation.

It ~~is easily~~ learned, even by the youngest child.

I should think that less time would be involved in the use of it, because several letters are often included in one sound.

As speech is more difficult for the deaf to attain than the written language, it seems as if it might be more profitable to spell a spoken, rather than a written, language.

It gives the deaf an easy means of communication by sounds, although these reach the mind by the eye rather than by the ear. So that vocal sounds learned in the classroom become fixed uncon-

sciously and accurately by their communication outside of the classroom, and are not forgotten as soon as they leave, for lack of practice.

There is that disadvantage which always accompanies the introduction of a new system. There must be time for the breaking away from old methods.

[Miss Harriet E. Hamilton, Teacher in charge of Articulation.]

The Lyon Phonetic Manual came to us just in time to supply a felt need in the school, and the increased interest in speech and speech-reading is undoubtedly owing, directly or indirectly to its advent. Daily exercises with the ninth, tenth and eleventh grades, which I have personally conducted, have demonstrated that through its use the pupils have acquired readiness and smoothness of utterance, and gained confidence in their ability to speak. Mrs. Willson's apt illustration of the trellis and the vine expresses well the most apparent aid which the Phonetic Manual has been to our pupils.

Although this Manual has all the suggestiveness of Bell's Symbols of Visible Speech, it does not prove a drawback to Speech-reading, if early taught, because the fingers move through the successive manual positions with a smoothness which corresponds to the action of the vocal organs. In conversation, by means of the Phonetic Manual, the eye no more observes detached elements on the hand than does the ear detect them in speech. Yet in correcting a mispronounced word the attention can immediately be called to an error by assuming the correct manual position for the misgiven sound or sounds. Careless speech is immediately corrected if the pupil is told to begin again and to spell while speaking. As an aid to the memory in syllabification no device that I have ever tried with the deaf has been so effective.

The use of the Phonetic Manual has demonstrated the following facts:

That advanced pupils become teachers of correct speech.

That the pupils who habitually use it in conversation make spoken language the habit of their thought.

That pupils become self-reliant regarding the pronunciation of words, and when in doubt habitually consult the dictionary.

That the discussion among the pupils as to the correct pronunciation of words is increased and stimulated; and

That the introduction of it in early years of instruction is highly advantageous—the A and B classes in the kindergarten having been most faithful and enthusiastic in its use.

Among the numerous instances of good accruing from the Manual, I will cite the case of a little girl in the kindergarten who taught her classmates the pronunciation of the word *yacht* by spelling it phonetically. When asked how she learned the pronunciation she took me to Webster's Unabridged Dictionary and finding the word showed me that it was pronounced *yŏt*, and that ŏ means *low, back, wide, round.*

Another extremely interesting illustration of the influence of the Phonetic Manual upon the acquisition of speech is found in the case of one of the older congenitally deaf pupils. The mastery of the Manual has turned the whole current of his life. He became convinced thereby that he might become a "semi-mute," as he expressed it, and since that time he has had it for his purpose to rely solely upon speech and Speech-reading in his intercourse with hearing people.

THE PRESIDENT: I am sure we will all be glad to hear from Dr. Gillett upon the subject of the Lyon Phonetic Manual in the Illinois Institution. We will be glad to know something of his opinion upon this subject, and what he proposes to do in that Institution.

DR. GILLETT: I am not able to speak from experience of the Lyon Phonetic Manual, but I was very much interested in what I saw of it here last year, and decided, as soon as possible, to induce Professor Lyon to come to the Illinois Institution and impart to our teachers a knowledge of this Manual. One of the young ladies, in the extracts just read, spoke of the Lyon Phonetic Manual as being to speech what the trellis is to the vine. That, to me, seemed a very apt illustration. Professor Lyon spent two weeks with us at the Illinois Institution last spring, working early and late, and working hard. He instructed a class of teachers, and also gave lessons to two classes of pupils, and the readiness with which the pupils caught on to this Manual was surprising.

THE PRESIDENT: How about the teachers?

DR. GILLETT: I would not like to say too positively at this time, as there are too many of them present. (Laughter.) I have been so much impressed with this Manual that I think it is one of the good things we have been looking for for a long while. I believe that it places upon the finger ends of the teacher the means of indicating to the pupil what he is desired to utter, and also of indicating his mistakes. I look forward to the use of the Phonetic Manual with a great deal of hope, and believe that we are going to have in it a very valuable aid, and think we ought to put it in practical operation as soon as possible. According to my observation, I must say that my opinion corresponds very closely with all that is said in those replies to the interrogatories that Professor Lyon made to those teachers at Rochester. I think that when we adopt it generally we will find it very, very helpful indeed. I have perceived, Mr. Chairman, that it is not so difficult to acquire as it would seem.

THE PRESIDENT: I must say, ladies and gentlemen, for myself, that I am very much interested in the experiment that has been made in the Rochester School in the practical application of this Manual to the teaching of the deaf. I have listened with intense interest to the remarks that have been made and quoted from the reports of the teachers, and I am sure that we all hope that Mr. Lyon will keep us fully informed as to the progress of that experiment. Miss True, who has had some opportunity of seeing this system in use in Rochester, is present, and we shall be very glad to know what she has to say upon the subject.

MISS MARY H. TRUE: When I first became familiar with the Lyon Phonetic Manual I was persuaded that it would be of incalculable benefit to the deaf. I therefore watched with the greatest interest its introduction and use in the Rochester Institution, and what I have seen of its practical workings there has tended to strengthen my first convictions regarding its value. The pupils have made rapid progress in the mastery of the Manual, in which they have shown the greatest interest. It has spurred them on to greater efforts to speak, and I am sure that the marked advancement which the pupils have made during the past year in speech was in no small measure owing to the use of the Phonetic Manual. I think the advantages and benefits of this Manual cannot be easily over-estimated.

DR. GILLETT: Dr. Noyes and I, last January, visited the Rochester School to see the school itself, and particularly to become better informed on the use of this Manual, and what we saw there went a long way to convince us of its very great value. I saw the pupils speaking with the lips, orally, and at the same time describing upon their fingers by means of the Phonetic Manual what they were doing with their vocal organs. That impressed me as being one of the strongest possible evidences of its value to us.

THE PRESIDENT: I was very much struck with an experiment I witnessed at Rochester, in which two persons were communicating with each other by means of the Phonetic Manual. I noticed that their mouths moved while they were spelling with their fingers.

Adjourned until two o'clock, afternoon.

AFTERNOON MEETING.

The afternoon meeting was devoted to the School of Practice, conducted by Miss Yale, and to a lesson in Visible Speech, by the President. (The proceedings of the School of Practice for the several

afternoons of the meeting are printed together in the part of this Report devoted to the "School of Practice." The lessons in Visible Speech given by Dr. Bell, were a review of the lessons given by him at the first summer meeting of the Association, and are not reported. The lessons which were reviewed may be found in the Report of the first summer meeting, published in 1892.)

Evening Business Meeting.

The proceedings were opened with an address by the President in which he brought to the attention of the Association a plan, that had been suggested by Mr. Fechheimer for the organization of local centres in the various cities of the country, to solicit contributions and to act as committees to forward the work of the Association. He also urged the establishment of a training school for oral teachers.

Mr. Robert C. Spencer, of Milwaukee, gave a history of the Wisconsin Phonological Institute, of which he is President. He favored broadening and strengthening the organization by the appointment of local committees.

Miss Yale, of the Clarke Institution, and Miss Fuller, of the Horace Mann School, explained the plan followed in their respective schools for training and appointing teachers.

THURSDAY, JUNE 30.

Dr. D. Greene delivered his second lecture on "How We Breathe."

Dr. Harrison Allen, Professor of Zoölogy and Comparative Anatomy in the Biological Department of the University of Pennsylvania, Philadelphia, delivered the first lecture of the course to be given by him, on (1) "Errors in the Framework of the Parts Used in Speech;" (2) "Errors of the Muscles of the Parts Used in Speech." (The lectures by Drs. Greene and Allen are printed in the part of this Report devoted to "Lectures.")

Afternoon Meeting.

The afternoon session was devoted to the School of Practice, conducted by Miss Yale (see "School of Practice,") and to a lesson in Visible Speech by Dr. Bell, (review of lessons in Report of 1892.)

FRIDAY, JULY 1.

Dr. D. Greene delivered his third lecture, on "How We Speak."

He was followed by Dr. Harrison Allen, who gave his second and concluding lecture, on "Errors in the Study of Speech as a Whole" (The lectures by Drs. Greene and Allen are printed in the part of this Report devoted to "Lectures.")

AFTERNOON MEETING.

The afternoon session was devoted to the School of Practice, conducted by Miss Yale (see "School of Practice,") and to a lesson in Visible Speech, by Dr. Bell, (review of lessons in Report of 1892.)

SATURDAY, JULY 2.

Dr. D. Greene delivered his fourth and concluding lecture, on "How We Teach Deaf Children to Speak." (This lecture is printed in the part of this Report devoted to "Lectures.")

The following paper by Mr. S. G. Davidson, of the Pennsylvania Institution for the Deaf and Dumb, was read:

READING: ITS INFLUENCE UPON THE LANGUAGE AND SPEECH OF THE DEAF.

It is obvious, upon the most cursory inspection of the subject, that almost all intellectual growth of the deaf, after leaving school, must come through reading.

A hearing person, whatever his station in life, cannot be wholly excluded from those iufluences which, in a civilized community, tend to the uplifting of the mind and the strengthening of the intellectual powers of the individual and to the general diffusion of knowledge. There is no normal ear to which sound waves do not carry some information of what is being said and done in the world. Something of the arts, sciences, religion, and politics penetrates to the lowest strata of society, and though it may be filtered, in its descent, of most of that which nourishes and strengthens, what remains represents a gain, however slight, to the individual and the community. Moreover, the friction of mind upon mind in the most trivial intercourse of daily life has, in itself, an important influence in the moulding and strengthening of many of the most important intellectual faculties.

It is different with a deaf person who is unable to speak or read the lips, and who has no taste or ability for reading. He may

be surrounded by the learned and cultured, yet remain more ignorant of those things which interest them and of which they speak than those hearing people whose lot it is to associate with only the most ignorant. The world moves, and he takes no note of its progress except where it is demonstrated before his own eyes, and but slightly comprehends it then. Thrones topple and fall, governments change, discoveries are made, great questions are discussed, fought over and settled, but of all mutations, except such as are made manifest in his own person, he remains wholly ignorant or receives, at most, but distant and distorted echoes. He can converse only by signs and writing, both awkward and unfamiliar methods to most of those with whom he comes in contact, and so their communications to him are as brief and infrequent as possible. It cannot be otherwise, under the circumstances, than that his mind should stagnate, that the end of his school course should mean the end of all intellectual growth; and that, where the surroundings are most unfavorable, he should retrograde until he loses much of what he gained at school.

Contrast with him those deaf people who read with facility and who are fond of books and papers: they take an active interest in life. They feel themselves part of the world, and that what concerns the world concerns them. They are able to keep abreast, and some of them in advance of the times. For them there is no retrogression or stagnation; their progress is constant and marked. Their school life was to them the beginning, not the end of their intellectual life. They are incalculably happier, better and of more value to the world than the class first mentioned. It is not necessary to adduce proofs of these statements. They must be true in the nature of things, and those of you who have any acquaintance with the after school life of the deaf know they are so in fact; and they are, though in a lesser degree, true of the orally as well as the sign taught deaf.

A teacher of the deaf in Germany—the birthplace of oral instruction—has lately been brought into prominence by the statement that "The German school at present lays the whole stress upon articulation. With unspeakable tortures the effort is made to force the deaf to speak in pleasant tones and to read from the lips what is spoken, and in this scarcely any progress is noticeable. Out of a hundred deaf-mutes there are not five who could take part in a conversation with hearing people whose speech could be understood, and who would be able to read from the lips with accuracy."

The same indictment against the method of instruction in the country is made by a large number of the German deaf themselves in a recent petition to the Emperor praying that the use of signs be made obligatory in the schools.

One of two things must be true—either these statements are false, or else the German teacher of the deaf is far behind the generality of his countrymen in his conception of what the end of his work and the proper method of attaining it should be; and we can but raise our hands in astonishment that such a large body of men of the same dust as Comenius, Badesdow and Frœbel, with these great educators' and their numerous great successors' examples and precepts to guide them, should be so far astray as to mistake sound for sense—the shadow for the substance.

If the German school did lay the whole stress upon articulation and speech reading it would be but a logical fact that there should be no noticeable progress in their work and that not five out of a hundred so taught should be able to carry on conversation through speech. The absurdity of giving children sounds, which are valuable only when used in connected language as a medium for the expression of ideas, and neglecting to give them either the ideas or the language, is manifest—while the "unspeakable tortures," if they existed, would in themselves account for more than the given proportion of failures.

Such a process as this must result in failure to attain the end sought as well as in every other direction. There can be no speech without language, and no language without ideas; there can be no correct speech without good language, and no good language without correct ideas, and correct ideas can be the product of only a properly trained intelligence. The general acceptance of this as an axiom would clear away much of the mist that has obscured oral work and given rise to distorted ideas regarding it. It would make plainer the goal of the teacher and the pathway to it, and no one bearing it in mind could make the blunder of crediting oral work with success, so far as imparting speech and speech-reading goes, and charging it with deficient results in language teaching and the training of the intelligence.

It would also make it plain that the consideration of methods for training the mind and teaching language has a legitimate place on the programme of a convention of those interested in the promotion of speech among the deaf.

One of the greatest advantages of the oral method of teaching the deaf consists in that it makes necessary a higher standard in

these things than is the rule in sign schools. Mistakes in language and confusion of ideas, little noticeable in a person whose communication with people about him is through signs,—natural or conventional,—and infrequent writing, must be very conspicuous in an oral conversation ; and without the ability to understand language and grasp ideas, it would, manifestly, be impossible to read speech on the lips. The faculty of anticipation to which the superior ability of some lip readers is ascribed is nothing but the result of a superior intellectual training and a good command of language through which one intuitively recognizes the relations between ideas and between words and foresees from the thought expressed and the word spoken the thought and the word that naturally follows. Thus, without greater success in the teaching of language and the development of the mind than we generally find in sign schools, the whole work of the oral school falls through.

Among educators who have made a study of their work, there exists, *in theory*, no wide differences of opinion as to the methods to be used in teaching language. The same may be said as regards *practice*. But between theory and practice there is a wide gulf, to span which only a few feeble efforts have been made.

The great educators have all believed in what we call the natural method of teaching language. Comenius said that " Every language must be learned by use, not by rules, *i. e.*, it must be learned by hearing, reading, and re-reading, transcribing, attempting imitations in writing and orally, and by using the language in conversation and writing." Ascham says, regarding one who depends upon the dictionary, that " He learneth first an evil choice of words, then a wrong placing of words and lastly an ill-framing of sentences with a perverse judgment both of words and sentences." Locke tells us that " Language is spoken in greatest perfection when all rules of grammar are utterly forgotten."

These sentiments are concurred in by the prominent educators of to-day, and by thousands of others who accept their creed on authority, not through reason. Yet the almost universal method of teaching language is by rule and precept and definition, and especially is this so in schools for the deaf, where there are very few teachers who do not depend wholly or in great part upon the memorizing and reasoning powers for the teaching of English, although they well know it is a language whose forms are so numerous that no memory can compass them and whose genius is so independent of logic that no rules can bind it to set forms of expression. The principle is the same whether we use the pure

rules of grammar, or symbols, diagrams, or columns and numbers representing the rules; whether we use a printed dictionary, a dictionary of signs, or make walking, talking dictionaries of ourselves. Some of these things are concessions to the spirit, but few if any of us have the full courage of our conviction that no one can acquire a facile use of language in any other way than by unconscious absorption through the eye and the ear, and by spontaneous imitation in writing and speech. Only once, in fact, has the principle been favored with a thorough test, unhindered by opposing methods, and in that case, when we saw the results, we exclaimed and called it a miracle.

Helen Keller is called a prodigy, and we are cautioned against believing that such results as have been attained with her can be other than exceptional. It seems a singular coincidence that the one prodigy of our work should be blind as well as deaf and dumb, and that she should have been educated upon principles so different from these followed with the rest of the deaf. It would be more reasonable to suppose that Helen is an ordinarily bright child and that the extraordinary development of her ideas and language is due to the unusual method which her unusual affliction has made necessary. The memorizing, defining, grammar method has only too many sad illustrations of its failure in our schools. Would it not be worth while to try the other method—not half-heartedly and with fear and trembling, but with full faith in its potency.

The easiest way of learning language is through the ear. The eye can never fully take the place of that organ, for the ear is constantly and without effort transmitting to the brain impressions that can be imparted through the eye only by a conscious voluntary effort. The duty of the teacher to supply as far as possible the deficiencies of nature is to some extent accomplished in teaching the deaf child to articulate and read the lips. Apart from the aid these powers are to him in his business and social life, he has, as regards development in intelligence and language, a great advantage over one who has to depend upon signs, writing and spelling, in his being able to associate more freely with hearing people and his having proportionately better opportunities to observe and imitate correct forms of speech.

Something more is necessary, however, both in school and after school, to obtain the best results; for, to repeat, the eye can never fully take the place of the ear, and, so far as speech-reading is concerned, it cannot even do its best in this direction until the

ideas and language are sufficiently developed to make comprehension and expression easy.

This need is supplied in books. In no other way can words, phrases and sentences be presented so rapidly and clearly as by reading. Indeed, so far as teaching absolutely correct forms of expression is concerned, reading has great and obvious advantages over conversation.

This being granted, should not some systematic effort be made to teach the deaf reading, and to inculcate in them a liking for books?

Looking over the literature of the subject, it appears to me that, in those few schools where any such effort is made, it is generally crude, unsystematic and unsatisfactory.

In some schools there are reading rooms--in almost all of them, libraries—but these aids, valuable as they may be made, amount to little when no definite and continuous effort is made to direct the children in their use.

In many schools papers published specially for the pupils are provided—in some daily, in others weekly, and in still others at longer intervals. Some of them wholly disregard the limitations of childhood and of deafness and are filled with matter which, in language and sense, is far beyond the comprehension of the average pupil; others contain compositions, stories and news items, written by the pupils, sometimes corrected and sometimes abounding in the peculiar errors of the partly educated deaf—in the latter case debauching the pupil's language, and in either placing before him something that could have been made more interesting and helpful to him if prepared by a person of mature intelligence and a better command of language. Still other papers represent an exaggerated idea of the limitations of the pupils and are couched in language far below their capacity. A few of them are as near perfection as the circumstances under which they are printed will permit.

In some of the schools attempts are made to interest the pupils of the higher grades in ordinary books and papers, but this work is elective on the part of the teachers, and consequently irregular, and it cannot have the cumulative effect of a prescribed systematic course of reading, covering the whole period of instruction.

The objection has been made that it is impracticable to teach reading during the first few years in school, and unwise to attempt it—that the proper use of language is to give information of something previously unknown—that the child should conceive of reading in its true office as a source of information and instruction, and that

he is likely to be misled—to misconceive the value and use of language and reading—if the attempt is made too early—and, moreover, that he will not at the time take that lively interest in the work that is desirable at the inception of a thing through which such important results are to be reached.

It is the *highest* office—not the *only* office—of language to convey information. Language is the expression of thought, and the thought may be either familiar or unfamiliar. It finds expression in disconnected words as well as in sentences. The word "man" represents to the child the idea of man which he has in mind, and is language to him. Again, leaving out the question whether that is not the only proper motive for reading, the fact is we *do not* read merely for information. We find the most pleasure in reading of things that are familiar to us. In the same way the child enjoys picking out the words he knows. The teacher of Helen Keller tells us she was given books in raised print long before she could read them, and she would amuse herself for hours each day carefully searching for such words as she knew, and that she would scream with delight whenever she found one. The deaf child's picking out of words which he knows, in a book, is analogous to the hearing child's recognition of isolated words in speech. It is a word here, a word there—now a noun, now a verb. By constant repetition the known words become familiar and their meaning clear. They become the key to the meaning of words associated with them and gradually the disconnected bits of language grow together, until, finally, every hiatus is bridged and the child comes to a full understanding of what he hears or reads.

This is the way we all learned to understand speech, and by imitating as we progressed in understanding, we learned to speak. In the same way we should teach the deaf child to read and to imitate in writing and speech as he reads.

Care should be taken as to what is put before the deaf child at the inception of the attempt to teach him to read. He should not be given for reading-books primers containing unconnected words, or such sentences as "I see a cat. Do you see a cat? The cat has caught a rat." We should accustom him from the beginning to think of language not as a collection of independent words or unmeaning gabble, but as sentences—expressive of definite ideas. He may recognize but a word or two in a sentence, but he should know that the idea is there and that those words he understands represent but a part of it. The effort to gain the whole, however slight, will, by constant repetition, produce understanding of all the parts.

On the other hand, the child should not be given reading too far beyond him in language and ideas. If there are too few familiar words or if the idea, when translated to him, is beyond his comprehension, he will be discouraged, and discouragement at this time is likely to produce a permanent indifference to or positive dislike for reading.

It is here that the value of a special literature for the deaf comes in. The printing office, which almost every school possesses, could not be used to better advantage than in providing reading for the younger classes. The value of daily papers, such as "Our Little People" of the Rochester school, and "Our Little World" of the Pennsylvania school, when they are properly conducted, is inestimable. There should be something like them in every school. Everything appearing in such a paper should be couched in language that simply, elegantly, and without unnecessary verbiage expresses the idea, and the idea itself should be clearly defined and such as the child's knowledge and experience will enable him to understand. Where the incident or thought is familiar it takes but one or two known words to give an idea of what is being said, and the idea then serves to translate many of the unknown words, and so the child will learn much faster than where the language deals with unfamiliar topics. By the word "elegantly" I mean the language should not be chopped up, as it often is, in the effort to simplify it, until all of its beauty and much of its power of expression is lost.

But the deaf should not be kept long upon a special literature. As soon as they have a sufficiently large vocabulary, they should be given the simpler books published for hearing children, and as their language and ideas develop they should be led on to more and more advanced reading.

There are people who have advocated a special literature for the deaf for the whole time they are at school and for their whole lives afterwards. They claim that language can never be made too simple for them and that if they are given only a modicum of language they will assimilate it more perfectly and use it to better advantage than a large amount.

This is a narrow view and can lead to only narrow results. A school that should turn out only graduates who could understand no language that was not written down to them and who would have to depend for all information and all intellectual growth upon books and papers prepared specially for them, would be a flat failure, and in so far as a school turns out any such graduates it is proportionally a failure.

The practice of simplifying both language and ideas is too common in our schools. The search of the teacher is for simple text-books and simple reading books, and where they cannot be found ready-made they are prepared to order. The language of the lesson is made as simple as possible. Whatever difficulties remain are explained away orally or by signs. Nothing is left for the pupil to do but to memorize and recite. He makes a good showing in the recitations and examinations, and his teacher and his teacher's methods are pronounced a success by those who judge by recitation and examination averages, whereas no power that can ever be of use to him has been cultivated, he cannot reason out the simplest principle, and can do nothing that requires an independent mental effort. He leaves school almost as much a child as when he entered it, and what little progress he has made ends there. He has gained no liking for books and is beyond the influence of even a special literature.

It is a good thing for the teacher to stoop to his pupils, but he should stoop no lower than the pupils' highest reach. Instead of bringing everything down to their level he should lead them to reach for what is above them. Indeed, the child himself will pass from intellectual as from physical creeping to climbing naturally and of his own accord if he is given something to cling to at first start. But if the inclination is checked and thwarted or not given the opportunity to assert itself, it will disappear. This is done when we keep ideas and language so simple that it requires no effort on the part of the pupil to understand them.

Again, it is a mistake to suppose that by restricting the amount of language we shall ensure a more perfect assimilation. Language must fully satisfy the needs if it is to be at all assimilated. The mind of the deaf does not differ from that of the hearing. With proper opportunities for development it is constantly growing, and as the thoughts and feelings expand, there must be a corresponding expansion in the language if they are not to be choked and turned back upon themselves for lack of expression. Where the language is insufficient to meet the demands made upon it, it will be unused and consequently unassimilated.

Where the work of training the pupils to an understanding of and liking for books is begun early it will present no great difficulties, and the child's progress will be natural and rapid, but when the attempt is first made after the age and the stage of development at which they take to reading spontaneously it will not be so easy. In this case we must not expect the ordinary child to read because

he is told books are good for him, or that those who do read from this reason or because they wish to please their teacher, will derive much benefit from the exercise. They will never acquire the habit of reading from such motives, and it is to the foundation of the habit that we must look for all but the most meagre results. We must lead the child to *desire* to read, and so make reading voluntary—a pleasure and not a task. There is great room for the exercise of ingenuity here.

One deaf young lady, who is now a great reader, was quite indifferent to books until a friend who took an interest in her adopted the practice of telling her stories in simple language, such as she could easily comprehend, and when she found she had her interested, excusing herself on some pretext, and referring her to the book in which the continuation could be found.

It is possible for a teacher to arouse the interest of a whole class in a subject by conversing with them thereon, and then putting in their way books and papers in which they can read about it themselves. For instance, my class during the past year became, through the many things they were told of her, very much interested in every thing concerning Helen Keller. Most of them read every word of the souvenir issued by the Volta Bureau, and several read through, with every evidence of keenest interest, the long account of the girl's life and work given in the recently published report of the Perkins Institute for the Blind. Every interesting fact they came across was commented upon among them, and I may say, in passing, that few better books could be placed in the hands of advanced pupils. It had an evident and beneficial influence not only upon the language but upon the whole character of those of my class who read it.

Again there are few children who have not some one thing in which they are particularly interested, and when the teacher has discovered what it is, it will not be hard for him to provide reading in which they will be interested.

We must not, however, presume that *any* reading will do, so long as it interests the pupil. This is an extreme into which many seem inclined to fall. It must be remembered that, in teaching pupils to read, the object is to give them something that will produce constant growth in language and ideas. The kind of reading the pupils prefer may not be the best for that purpose and we must endeavor to lead them, through it, to like a better and more profitable kind. One of my boys is especially interested in base-ball and reads with avidity everything relating to the game that appears

in the daily and sporting papers, but until lately has never read books. He did not appear to care for any of those with which the class was provided until I procured for him one of Grant Allen's stories of school life, in which the national game plays a prominent part. He read the book through within a short time and expressed himself as very much interested in it. Since then he has voluntarily read several stories of domestic child life.

The teacher must take more than a merely perfunctory interest in what the pupil is reading. His personality exerts a sort of magnetic influence over the whole nature of the child, which is plainly manifest in all its mental, moral and physical attitudes. What the teacher does his pupils will do; as the teacher thinks his pupils will think; the teacher's likes and dislikes will be the pupils'. No teacher who is not himself passionately fond of books can expect to inculcate any great liking for them in his pupils. If the teacher teaches reading as a task, the pupil will look upon it as a task and the object of his work will be defeated.

There has been a great deal said in favor of newspaper reading and no one will deny that the deaf should be taught to keep track through the papers of what is transpiring in the world. But it is not all-sufficient.

The newspaper deals mostly with incidents of transient interest, such as make no permanent impression upon the mind, while the language is more difficult than that of any other kind of literature, such as is not likely to be assimilated by the deaf, and such as they should not attempt to imitate. It is the evolution of two opposing interests. The space reporter, in his effort to make the copy fill so many columns, gives us a lot of unnecessary and irrelevant details, often eked out with slang and horse wit, and the editor cuts down and condenses to save space; so that we have, depending upon the character of the publication and the intelligence with which the work is done, short, jerky sentences with all superfluous parts of speech eliminated, or long, involved, complicated, compact constructions, difficult for the deaf to understand and impossible for them to imitate without disastrous results. We should teach the deaf to read papers as the hearing read them—skimming them over and abstracting the main idea of whatever is important—leaving the rest. For reading that is to greatly benefit them, as regards either language or ideas, we must give them books.

If asked what kind of books, most people would answer "useful books," meaning books of history, travel, biography, etc., which contain facts and impart information. If there is a child who

likes such reading, gratify his taste, but do not thrust it upon him. Such books are not most suitable for childhood reading, and it is to be questioned whether they are most useful. As De Quincy says: "What do we learn from 'Paradise Lost'? Nothing at all. What do we learn from a cooking-book? Something new. Something that we did not know before in every paragraph. But would you therefore put the wretched cookery-book on a higher level of estimation than the divine poem?" Make children study for facts if you will, but let them read for the spirit. Their own spirit will benefit thereby.

"The Five Little Peppers," "Edith's Burglar," "Little Women," and similar books which my class have read during the past school year, have had greater influence for good upon their characters, intellectual and moral, than all the history lessons that have been crammed into them. The passions and motives of history are beyond a child's conception, and they should not be thrust upon him until his mind is prepared to receive them. Those things in history which interest him are of no more importance than so much fiction, if they are not fiction themselves—such, for instance, as Washington chopping down his father's cherry tree, and riding his mother's colt to death, or Tell shooting the apple from his son's head. Such things as these they appreciate; but Washington fighting for the freedom of his country and governing a nation is beyond them.

Almost if not all children will be interested in simple stories of home and school life. The incidents, feeling and thoughts that make up such a story will have come within the range of their own experience, and will be easily understood and more firmly impressed upon their minds than stories of history or travel.

To have the reading of a character that will make a lasting impression is of the utmost importance, for each time the child recollects an incident or thought he will recollect in whole or part the language in which it was expressed, and thus the language also will be permanently impressed upon his mind.

It is, of course, necessary to begin with short stories; but, as soon as possible, the children should be led to read long ones. A long story has a number of advantages over a short one. Two very important ones are that the continuity of thought and interest are longer, and that, ordinarily, writers have a set form of expressing themselves—have certain pet words and phrases in which to clothe their ideas—and the many repetitions of these in the course of a long story serve largely to make their signification clearer and

to fix them in the readers' mind. For the same reason the reading of a series of books by the same author is advantageous.

A purely narrative style is the easiest to follow, but one in which dialogue abounds has proved interesting to my class and it has this advantage,—that the questions and answers and the remarks of the different parties to the dialogue serve as translations of each other, and thus the child picks up many new words, phrases and idiomatic expressions.

In the lower classes it may be advantageous to have all read from the same book, but pupils in the advanced classes have their individual preferences, which should be consulted as far as possible, and their varied ability to understand language and to grasp ideas should also be taken into account.

The teacher should not spend time in an effort to ensure understanding of every word and phrase in the book, as by so doing the reading will be made a tedious task and not a pleasure—and most of the work would be thrown away, as it is only through frequent repetitions in varied connections that one can arrive at a perfect comprehension, and the more rapidly he reads the more frequently the word and the phrase will be brought to his attention. Words and phrases of rare occurrence, over which the teacher would spend most time, are not those which it is most desirable the pupils should understand.

My own pupils are told to read straight ahead and only to come to me for aid in case they lose track of the central idea. I do not however, leave them wholly to themselves. I pass among them, calling their attention to the beauty of some idea expressed, picking out and explaining a word here and there that is the key to some sentence or paragraph, or chatting with them about the story.

When the pupil applies for explanation he should be given as little aid as possible, the teacher assisting him to arrive at the meaning through the context, or leading up to it by questions and suggestions, going not a step beyond the point from which the child can proceed unaided. Our aim, I repeat, should be to form in him the powers and interests through which he can arrive at all desirable knowledge for himself. If the teacher's head is to do all the thinking, of what use is the pupil's ?

There are several ways in which the teacher may judge whether the pupil has comprehended what he has read and in which assimilation of the thought and the language may be hastened. He may have oral or written conversations between the pupils regarding what they have read; he may require the pupil to write a brief

abstract of the story as a composition exercise; to tell his friends about it in his letters; or to write an original story on the same plan, changing the names and inventing such incidents to fill out the outlines as he can; or to rewrite the story, changing the distinguishing traits of its characters—making the bad good and the good bad. All these will be found to interest the pupils and to have a direct and lasting influence upon their language and general intelligence. They should never be required to rewrite a story, word for word, for it is only by combining the expressions that particularly strike their attention with such language as they already possess that they can truly assimilate and make them their own.

In conclusion, to quote Dr. Bell, "I would have the deaf read books to learn the language;" but I would also have them write in order to learn how to use it. Reading and writing are two dissimilar actions depending upon different mental functions. One must learn to read before he can write, but no amount of reading will enable one to write or speak a language correctly without constant practice. As Emerson says: "Write, write; there is no way to learn to write except by writing." And we might add, for the benefit of the orally taught deaf: "Speak, speak; there is no way to learn to speak except by speaking."

The reading of this paper was followed by discussion of it by Mr. Elmendorf, Miss Yale, Dr. Noyes, Dr. Gillett, Mr. Davidson, and the President. They urged that all effort should be made to train deaf children in the habit of reading.

The following resolution was offered by Mr. Booth:

Resolved, That a committee be appointed to take under consideration the question of providing reading matter for deaf children, and that they prepare a list of suitable books to be submitted at the next Summer Meeting of the Association.

Seconded and so ordered.

The President appointed as the Committee, Mr. S. G. Davidson, Mr. D. L. Elmendorf, Mrs. Alice Noyes Smith, Miss Sarah Fuller, and Miss Rebecca Sparrow.

Afternoon Meeting.

The afternoon meeting was devoted to the School of Practice, conducted by Miss Yale (see "School of Practice,") and to a lesson in Visible Speech, by Dr. Bell, (review of lessons in Report of 1892).

Evening Business Meeting.

The Secretary announced the receipt of one hundred dollars, his annual subscription, and twenty-five dollars, his donation to the entertainment fund, from Mr. L. S. Fechheimer.

Mr. Fechheimer's plan for obtaining subscribing members was discussed by the President and Mr. Spencer.

Dr. Greene and Mr. Booth, who were appointed a committee to nominate local committees, reported progress.

The terms of three directors, Mr. L. S. Fechheimer, Dr. David Greene, and Miss Caroline A. Yale, having expired, the President announced it was in order to elect their successors.

On motion of Mr. Lyon, the outgoing directors were elected their own successors to serve the full term of three years.

The following cable dispatch was read;

"LONDON, July 2, 1892.

"To MR. GRAHAM BELL,

"Lake George, N. Y.

"May Second Summer Meeting be crowned with success.

"WESTERVELT."

(Applause.)

Dr. Gillett and Dr. Noyes gave in detail what had been done and what it was proposed to do at the Congress of Instructors of the Deaf at Chicago the coming summer.

After discussion as to what part the Association should take in the Congress, the whole question was on motion referred to the Executive Committee with power to act.

Mr. Spencer called attention to the great practical value of Dr. Harrison Allen's lectures delivered at this meeting, and made the motion that the Executive Committee be requested to take such steps as they deem best to furnish teachers generally, as well as medical professors, with such parts of Dr. Allen's lectures as will be of most use. Seconded and carried.

MR. CROUTER: I rise to call the attention of the members of this Association to a matter which I believe to be of very great importance to the future progress of oral instruction in this country. It has come within my experience, as I have no doubt it has come within the experience of all who have charge of schools, that it is a very difficult matter to secure trained oral teachers. It is not necessary for me to dwell at length upon the great importance of having such teachers; successful schools are impossible without them. With a view to bring the matter before the Association I desire to offer the following resolutions, believing they will meet with the hearty approval of every member:

WHEREAS, Statistics show that the training schools for teachers of the deaf at present existing in America, do not supply a sufficient number of trained teachers of articulation to meet the demand, and,

WHEREAS, The Clarke Institution of Northampton, Mass., has had for years a training class for the teachers of her own school;

Be it Resolved, That the Trustees of the Clarke Institution be requested to enlarge their training class so as to supply teachers for other schools; and,

Resolved, That the officers of this Association transmit these resolutions to the Trustees of the Clarke Institution.

DR. GILLETT: I should like to second that motion, for perhaps I have had as much aid from the Northampton School as anyone present or absent. When it was a little school in a rented building, in 1868, (I think, Mr. Dudley had taken the school in his private house,) I heard something of that heretical establishment at Northampton, which was teaching the deaf to talk, and went to Boston to see Mr. Hubbard, the President of its Board, and confer with him about it and ascertain whether I could have the privilege of inspecting it. He assured me of a most hearty welcome and went there with me himself. I was cordially received by Miss Rogers and her assistants, who kindly consented to impart to any one whom I would send a knowledge of their methods. Since then they have done so, again and again, and have done us a great deal of good. I desire in seconding this motion to express my appreciation of the great kindness of Miss Rogers and Miss Yale for the valuable instruction they have given my representatives, for I know how serious a matter it is to admit a novice into the schoolroom to study both teacher and pupils.

MR. SPENCER: I rise to support this resolution which I do with a very great deal of pleasure. Representing an organization devoted partly to training oral teachers of the deaf, I might be supposed to have some interest not in entire harmony with this resolution. I desire to say however that too much good work of this kind can not be done, and I think that the Northampton school is in a position to do much more of it than any other school, and much more than it is now doing. We ought, therefore, to ask the trustees of that Institution to enlarge their facilities for normal training. A stronger reason for making this request is the policy which guides that Institution, and the very high standard which it maintains. Superficial work upon bad or illy prepared material will not yield the best results. The Northampton Institution has required a higher preparatory education than others, and adds to this the special instruction and training for the oral education of the deaf. In normal work, at Milwaukee, we endeavored to maintain the Northampton standard. We can however accept more than five Normal students this year. I second, Mr. President, most heartily this reso-

lution, feeling sure that it expresses the general sentiment of the friends of oral instruction throughout our country.

MISS FULLER: Before the vote of the Convention is taken I desire to express the thanks of the Boston School for the Deaf for the aid which they have received from the Northampton School.

MR. GILLESPIE: I desire to support this motion in behalf of the west. In 1877 I had occasion to come east and look up the oral methods for the instruction of the deaf as you will remember, sir, yourself. At that time I had the pleasure of visiting in Boston the school over which Miss Fuller presides, and of making a visit to Northampton. The knowledge which I gained of articulation and the results of articulation made me a convert to the oral method myself; and though I am in a school now which is catalogued in the general line of combined schools, I do not like the name. I simply wish to call it a school for the deaf, without modification, manual or oral or combined. But my visit here this time has convinced me that the methods of instructing the deaf are on the up grade. I have thought for years that we were not doing what we should; I have thought for the last year particularly that there are methods beyond us; that we are just in the dawn. The progress we have made in the last fifty years is a good omen for the next fifty; and if we progress as much in the next fifty as in the past, the education of the deaf will occupy a much higher plane than it now does.

THE PRESIDENT: I desire to direct your attention to the very great importance of this resolution. Statistics show that forty-seven new teachers of articulation were added to our numbers last year. Where did they come from? Where were they trained? We have training schools for the deaf which have done good work; but certainly they have not trained forty-seven teachers of articulation during the past year. I think our duty as an Association is to urge upon all the schools of the country that have training classes for their teachers, to give other schools the benefit of their training. The Clarke Institution has had for years a training class, in which a very high standard of efficiency has been maintained, and I think this Association should ask the Clarke Institution to train a larger number of teachers than are necessary for the Clarke Institution itself. At present demand far exceeds supply throughout the country. I have great pleasure in putting the question to a vote. Passed and so ordered.

MONDAY, JULY 4.

THE PRESIDENT: The association will please come to order. This is a meeting of the association not down on the programme. We thought we might as well utilize the forenoon for a litttle work as to leave it entirely to pleasure. It is an entirely voluntary meeting, and we can put on the programme such matters that we would not have time for on the other days, on account of the way in which we have filled up our time. I will call upon the Secretary to report any matters.

THE SECRETARY: It was thought best at this time to read reports from schools that are not represented at this convention.

Reports from the Utah School, the Indiana School, Montreal Catholic School, and the Mississippi School were read.

THE PRESIDENT: I am sure we are glad to welcome to our meeting Mr. Seliney, of the Central New York Institution at Rome, and we should be very glad if he would say a few words to us.

MR. SELINEY: (Interpreted by Mr. Booth.) MR. PRESIDENT, LADIES AND GENTLEMEN: I am here at this time more as a newspaper man than as a teacher, but I have been associated with the deaf all my life—teaching them ever since I have been out of school. I am now representing *The Deaf-Mutes' Register*, and I recommend that paper. I am here for investigation; to inquire into the progress of the deaf as made in teaching speech.

The average of the deaf who learn to speak is increasing very fast. The claims of some people that one hundred per cent. of the deaf can be taught to speak, and those of others that the number is thirty per cent., implies a difference—a wide difference—and I am trying to reconcile those two claims; but I believe the average is increasing every year.

I have always wished to learn lip-reading. While in the New York Institution I had the best of teachers, as Dr. Englesman, who was in charge of the oral school in New York, and Mr. Rising, his successor. I was in school nine years, and I never had a deaf teacher, always a hearing teacher, and I find that I have difficulty in lip-reading.

My wife can hear and speak perfectly. I have been married many years; but just as soon as I come here, I find that I am a very poor lip-reader. I have talked with your great men and women here, and they have told me that ninety-nine per cent. of the deaf can learn lip-reading. Well, I am beginning to think that the missing per cent. that cannot learn lip-reading is I—myself.

The proceedings of the association I cannot hear and there is no interpretation; the minutes are given to me to read. One thing I am very much pleased to see—that it has been decided to establish a training school to train teachers to teach speech. Talking to the oral teachers relating to the deaf learning to speak, I have said that I have seen some wonderful cases of the deaf speaking and reading lips. At the same time I have seen some very remarkably poor talkers and lip readers, but when I speak of such cases the teacher always says those poor specimens never had good teachers. It is always that way and that silences me. I can say nothing. Now if at Northampton teachers should learn a perfect system of teaching, and in five or six years show us the results, and it should appear that there are still those who are not good speakers and lip readers, I shall be curious to know the next reason which will be presented. I have always believed in teaching speech by the lips to a part of the deaf. The fraction is improving, to be sure, but I fear it will not reach a whole number. The training school at Northampton makes me feel good, if for no other reason than this: I have, at home, a little girl who is sixteen years old. She can hear and she is bright and sharp. She has just those qualities ladies should have to teach the deaf and dumb. I have decided to make her a teacher by the oral method, but where to send her I have not known. Her academic course will be finished in a year. She will be learned in the languages—can teach French or English or German.

I have been puzzled to know where to send her to learn the oral method. Now, I know that I can send her to Northampton. Then, when she is fully prepared to teach the deaf and dumb to speak, she will be my contribution to oralism. (Applause.) Of all the papers here that I have read, the leading one is Dr. Allen's. It is a wonderful paper. If, in the ten days we are here, we should not hear anything more than that one paper, we will have heard enough. I hope the Volta Bureau will publish it with all its discussions, and send it not only to the institutions and the teachers of the deaf, but also scatter it abroad throughout the medical profession. I want every doctor in the United States to read this address, so that he can know what the necessities of the deaf are; so that if they see a deaf child or a child that has something wrong with its vocal organs, that child can be medically prepared to be sent to a school and not to an asylum for the feeble-minded. I hope to live long enough to see the day when medical science will have discovered something to make the deaf hear, because all science is progressive.

There must be a time in the future when the deaf will become, as a class, smaller. I believe that if Dr. Bell can invent a telephone, he or some other man can invent something for our ears, and so there are great possibilities in store for the deaf.

In the Constitutional Convention that made our national constitution, such men as Jefferson and Hamilton were continually quarreling over systems. Washington was in the chair, and he never showed greater genius that when he reconciled the two rival systems.

There was, back of the President's chair, a painting of a sun on a horizon, and that was all. When the business of the Convention was done and there was peace and agreement over the adopted Constitution, Benjamin Franklin arose and addressed Washington. He had for a long time been looking at that picture; he could not tell whether that sun was a rising or a setting sun, but now he saw it all—there was enthusiasm and harmony, and he knew that it was a rising sun. So it is with the work of teaching the deaf: it has arrived at a period when we can see that we are looking upon a rising and not upon a setting sun. (Applause.)

THE PRESIDENT: The membership of our association is not confined to those who can hear, but it is participated in also by those who cannot hear; many of our deaf members are very much interested in our proceedings, and help us in every way they can. We have with us to-day, a lady who has come all the way from Kalamazoo, Michigan, who came to do what she can to help the cause, and I am sure we have very great pleasure in welcoming Mrs. Finney to our meeting. She has placed in my hands a short account of her own very remarkable experience in learning speech and speech reading, which I will read to you, and then Mrs. Finney will be very glad to answer any questions concerning her life and experience that would be of value to those engaged in the work of teaching the deaf.

CROSBYSIDE, LAKE GEORGE, NEW YORK,

July 3, 1892.

DR. BELL: *Dear Sir:*—As you have expressed some interest in me I will write you a little of my history and life. You can make such use of it as you think best for the good of the cause we have so much at heart.

My father's grandfather, John Barstow, came from England in 1635 and settled in Connecticut. My father's father moved to Vermont, six miles south of Burlington, in the town of Shelburne. My father was born there and died there. That is my birthplace.

I have a sister ten years older than myself and a brother two years older than myself, who are deaf like myself. We all became

deaf at the age of three and a half years. No cause known. It was not hereditary. We grew more deaf as we grew older, are now entirely deaf, and have been so for many years. I was born in 1825. We were sent to the public school with hearing children, and were treated the same, excepting that my sister and brother were spoken to loudly, close to the ear, until my sister was ten years old when she began to read lips. I do not remember being spoken to that way myself. I do not remember hearing common conversation. I was made to look at the lips from the first and read speech from them. I tried to move my own in the same way to form words, at the same time using my voice. I never had any especial training in voice culture. In fact I have scarcely ever been shown how to speak correctly.

At the age of thirteen I had scarlet fever; the canker ate my palate half off. I was conscious of a change in my voice, which before had been clear, and strong. I became unwilling to use it, and for about eight years I would whisper in company, and although ambitious to obtain an education higher than that to be had in the public school, I was not willing to have my voice heard in other schools.

I read a good deal and wrote my thoughts in prose and verses and some in blank verse and acrostics, and I had many correspondents to whom I wrote letters. I never saw a deaf and dumb person until I was about 27. When my father returned from the legislature (as a Representative) he brought a report from the American Asylum at Hartford, which I read. It was the first time I had any knowledge of any school for the deaf. When he again returned from the legislature (as a Senator) he brought another of the reports—that for the year 1851. I became greatly interested in the letters from the deaf and dumb children, as well as in the reports of the school. I wrote to the Principal, Mr. Weld, and told him about myself and brother and sister. He replied to it inviting me to visit the Asylum and stay four weeks and expressing much surprise at what I wrote and a desire to see me.

It was with very much difficulty that I obtained my father's consent. I spent four weeks at the Asylum in the Spring of 1852 —forty years ago. Mr. Weld said it could not be possible but that we used signs some in our conversation. He also said we could not read poetry different from prose. I assured him that I did not read it in the same way. He gave me three girls to teach for a week; one of them was born deaf and dumb. I taught them to say some sentences and to read my lips in learning them. He had us in his office at the end of the week for an examination and expressed much surprise at the result. Mons. Clerc, one of the teachers, said he never knew such a case as mine, and that I ought to have a class there and a salary of $600 a year. Mr. Weld said that if they had enough new pupils the next school year to warrant the forming of another class and employing another teacher he would like to have me come and teach a class of those most apt to

learn lip-reading and speaking. He wrote to me in the Fall that they did not have enough.

I was married the following year, and removed to Michigan. I have since visited the institutions for the Deaf in Flint, Michigan, and Olathe, Kansas; also Mr. Westervelt's and Miss McCowen's Schools for the Deaf.

My husband was a lieutenant in the war of the rebellion, in Company E, Sixth Michigan Cavalry, and died of a wound from a rebel sharpshooter's rifle, while in the act of bringing one of his men off the field of battle while he was acting captain, on the day Lee surrendered, April 9, 1865.

We had two small boys. I brought them up alone. The eldest died last Winter; the youngest is a lawyer in Kansas City. Through him I learned of the meeting here last year (from Miss Daisy Way), and she wished me to be present. I visited in Kansas City this Winter and met Miss Way several times. She told me about Miss McCowen's school, and wrote to Miss McCowen about me. The result was an invitation to visit her school on my way home. I did so, and Miss McCowen afterwards spent a couple of days with me at my home in Kalamazoo, Mich. She and Miss Way seemed anxious to meet me here this Summer, but they are not here, which I greatly regret. I was invited to go with a friend to New York. I did so, and am on my way to Vermont.

I was a regular attendant at church, Sabbath-school, and prayer-meetings with my father. I was sometimes requested to make a prayer. I often spoke. I used to find the chapters, hymns, and texts given out by the ministers. They did not use to wear moustaches. I could understand much of the sermon, if the minister spoke plain. At one time I only had a side view of his face and understood every word. He did not turn his face to one side or the other, but kept still. I have understood the whole of a prayer. I have injured my eyesight by too much reading, and cannot read speech as well now as I could then. My voice has been husky at times since I was thirteen years old. I do not use it in talking to the deaf who read lips. I carry on silent conversations with my brother and sister above named, and two sisters who hear, but can read the lips.

In haste and very respectfully, MRS. M. E. FINNEY,
Kalamazoo, Mich.

THE PRESIDENT: I am sure we will be very glad if you will say a few words. We shall be pleased to have any one ask questions of Mrs. Finney. Miss Fuller will you ask Mrs. Finney some questions?

(Mrs. Finney took the platform, declaring that she had never before addressed an audience and had no confidence in herself.)

MISS FULLER: Do you go among the people of the village or town where you live?

MRS. FINNEY: I go with those with whom I am acquainted.

Q. Do you have any difficulty in understanding them?

A. If they talk plainly I don't.

Q. Do you enjoy talking with children?

A. Very much indeed; I am very fond of children.

Q. Can you understand children readily?

A. Those I am accustomed to.

Q. Do you understand rapid speech better than slow speech?

A. I understand slow speech better.

THE PRESIDENT: Do I understand you to say that you have never been in a school for the deaf?

A. I have never been in any for instruction.

MR. CROUTER: How did you learn to read by the lips?

A. Through my brothers and sisters. I watched their lips and tried to imitate them, using my voice at the same time.

Q. Did you learn from imitation?

A. Yes. When I went to school I always looked at the teacher and understood her. I looked at her lips.

Q. Did you go to a hearing school?

A. Yes, always.

Q. How long did you go to a hearing school?

A. Until I was about fifteen.

Q. Have you hearing brothers and sisters?

A. Yes, I have three hearing brothers and two hearing sisters.

Q. You attended the same classes they did?

A. Yes.

Q. Do you know whether or not any members of your family ever lived in Philadelphia?

A. Not any of them.

Q. Did any one, by the name of Barstow, ever live in Philadelphia?

MR. CROUTER: There was a little girl in that family who became deaf. She came to a school in Philadelphia and she was in my class. She could speak and read the lips very well, and she was a very bright little girl.

Q. Do you know whether that family was related to the Barstow's?

A. I don't know.

MISS FULLER: How old were you when you became totally deaf?

A. I cannot tell just how old. It has been several years.

MR. CROUTER: Could you hear when you were ten years old?

A. Loud sounds a little. I grew worse as I grew older. I do not remember hearing common conversation.

Q. Could you hear when you were fourteen years old?

A. Very loud sounds a little, but I could not hear people talk at all. I could not understand people when they spoke to me, unless I watched their lips and mouths. Those who knew me did not talk loud in my ears.

Q. Could you hear what people said to you when you were six years old?

A. I don't remember; I don't think so.

THE PRESIDENT: Do you mean to say that you don't remember sufficiently that which people talked about?

A. I could not distinguish the sounds if I could hear them; I could not understand unless I looked at their lips. I don't remember hearing them.

Q. You have two sisters who are deaf like yourself?

A. One sister and one brother.

Q. Do you talk together by word of mouth?

A. Yes, sir.

Q. Entirely?

A. Yes, sir.

Q. Do you ever spell on your fingers?

A. I learned to make letters with my fingers, but I don't use them.

Q. Why not?

A. I don't have to.

MRS. SCHMIDT: Will you tell us how you think deaf children should be trained?

MRS. FINNEY: I think deaf children who are *capable* of learning speech could be taught better if put in a school with hearing children; I think they better be together.

Q. You think that deaf children should be associated with hearing children?

A. Yes, I think they can learn much better in that way, if they have been with them from infancy and taught to talk and read lips; the hearing ones tell them many things.

Q. You say that they can understand you?

A. Yes.

DR. BELL: We would be glad to have you tell us anything you would like to.

A. What shall I say, this is my first speech.

THE PRESIDENT: We are ready to hear you.

MRS. FINNEY: I am very glad to be here and to know that I belong to you, to your tribe, as it were, especially to those who are deaf, and who speak and read lips as I do, and if there is any thing that I can do to help this cause, I am very glad to do so. For forty years I have been anxious to let the world know that deaf children could be taught to speak and read lips instead of making signs. I pity the child who has not had the chance to learn to read people's lips, and to speak. And I pity the mother who cannot teach them or does not know that it is possible.

MR. CROUTER: Have you taught your own children to speak?

MRS. FINNEY: My own children were not deaf, I always talked to them.

THE PRESIDENT: How did they talk to you when they were very little?

MRS. FINNEY: They looked up at me and moved their lips plainly. I want to tell you something. Miss McCowen,—I presume some of you know her,—wrote me this Spring, that she had a letter from a lady in Blairswell, Michigan, twelve miles from where I live, who had a little girl who was born deaf and dumb, and is now five years old, and she wanted to know what could be done with her, and whether she could teach her to speak; and she sent a letter referring her to me, and said she presumed that I would hear from her soon. From this lady, her name was Mrs. A. L. Thompson, (I do not know whether I speak right or not, you will have to tell me,) I received a letter and she said she would like to meet me personally, and I wrote her to come and see me and bring her little girl; she came but she did not bring the little girl. I was disappointed. I talked with her some time and finally I mentioned that there was a baby in another part of my house, but its crying did not disturb me. She said, "It does not disturb you?" I said, "No, I cannot hear it at all," and she said, "How do you hear me?" I answered, "I do not hear you," and she said, "How do you know what I say?" I said, "I see what you say." She said, "You see what I say?" I replied "I understand by the movements of your lips;" then she said, "I never heard of such a thing." Just think of her trying to have her child learn to speak, and not knowing that she could be taught to read speech! I felt so sorry for that poor mother. She said, "I will come again and bring the little girl." She did so. I tried to talk to her; she could only say "Mamma," and she was five years old. She has a good voice; her mother never tried to teach her to talk at all, (she did not know it was possible till lately), but motioned to her when she wanted to speak to her. I showed the

child some pictures and flowers, and tried to make her say " flowers," but she refused to try to at first. I persevered and took her in the garden and gave her a bouquet. Her mother was with me. I said, " Try and make her say ' flowers.' " She put her hand under the child's chin and showed her how to put her upper teeth over her lower lip and say " flowers," she said " f—mamma." After a while she said " flowers." Mothers do not know what they can do with their children who are deaf and I think we should publish more to the world than we do, what is possible to do for children who are deaf, and not let them grow up and not know anything about talking. My friends do not know about and appreciate this work as I do. Some of them seemed to think it was very foolish for me to try and come here alone; even my sister, who is deaf said, " What is the use of your going to Lake George ? " A lady was in Saratoga last week who is from New York. I told her I was going to attend this Convention, and I said, " Do you not think it is better for the deaf to speak than to use signs ? " She replied, " No, I do not." There were other ladies from New York there. One of them said she heard a man who was deaf and dumb once, and had been taught to speak, and he made such horrid noises in trying to talk that she wished he would not talk. I feel such an interest in this work that I shall continue to do what I can. I give thanks to my Heavenly Father for all I am capable of doing. If it was not for His help I would not have been able to get along since my husband died, alone, and bring up my children; but by the grace of God I have been able to do all these things, putting my trust in Him. I appreciate your kindness.

THE PRESIDENT: I am sure—and, on the part of this Association, I must thank you very much for what you have said to us, —that you will be a great help to the cause. The next member of our Association who will speak is Miss Annie Lowery, from Cincinnati, Ohio.

MISS LOWERY: I lost my hearing about nine years ago, from Cerebral Meningitis. My father did not know of any school for the deaf, and he sent me to the public school, but I could not understand much that was said, so I used speech very little, sitting silent in the school nearly all day long. I continued in this way for three years; then I went to the Cincinnati School for the Deaf. It seemed very hard at first, as I could not speak to them; sometimes I had to read several times before they could understand me. I wondered why the teacher made me watch the lips of others so closely. One day my teacher spoke and I did not understand her,

then she wrote it on the slate very rapidly, and I could not understand it, so I said, "Please rub it out and write it better." I have been in the school six years, and now seldom have any difficulty in understanding what people say. I notice also that people seldom ask me to repeat what I say.

About a year ago I went where they taught the Manual Method. I did not want to go away from the Oral School in Cincinnati, and was pleased when I was told that I might remain. I should like to be with hearing children and see if I could learn the same lessons in the same way. I am thankful for the attention given me, and I am proud to think that I am a member of the Association for Promoting the Teaching of Speech to the Deaf, and I am very grateful to friends for giving me that honor.

THE PRESIDENT: If any one would like to ask Miss Lowery any questions, she will be glad to answer them.

MR. CROUTER: Can you hear, Miss Lowery?

MISS LOWERY: No, sir.

Q. How old were you when you became deaf?

A. Eight years old.

THE PRESIDENT: Did you go to school for hearing children before going to the Cincinnati school?

MISS LOWERY: Three years.

THE PRESIDENT: Are there any more questions? (Turning to Miss Lowery): We are very much obliged to you. Orville Howard, of Boston, is the next who will come before us.

MR. HOWARD: I became deaf when I was about six years old. I went to the public school where I lived, and so passed through the different classes for about seven years, and graduated from the highest class in the Grammar School. I then went to the Horace Mann School for the purpose of learning to read the lips more perfectly. I entered the Berkeley School last October, and was put into the lowest class of the High School Department. I study algebra, arithmetic, history, grammar, physics and reading, and expect to take up French next year. I recite with the other classes, and can understand all the teachers very well, and when I finish the studies of that school I hope to go to the Institute of Technology, and there learn to be an architect. My friends at home are all hearing boys, and I get on with them even better than with the deaf people.

MR. CROUTER: Did you never attend any school for the deaf except the Horace Mann School.

A. No, sir.

THE PRESIDENT: How long were you there?

A. One year.

Q. You went there to learn lip reading.

A. Yes sir, to learn lip reading.

Q. Are there any other questions to be asked?

MR. DAVIDSON: I should like to ask whether he knew how to read the lips before he went to the Horace Mann School?

A. Yes, sir, but I went there to learn it more perfectly.

MR. DAVIDSON: Did you have any difficulty in communicating with people by that means before you went to the Horace Mann School?*

MISS JORDAN: He told me that before entering our school he did not get along with his lessons there in the school with the hearing children, as the teacher did not give him time, and he was permitted to read story books while the recitations were going on; and, although he went along with his lessons, he did not get along as well as he did after he came to our school.

MR. CROUTER: Still he says he passed through one of the Primary Schools in Boston before he went to the school for the deaf.

MISS JORDAN: It was in Randolph, where he lived.

MR. PRESIDENT: Thanks. Miss Bowden wishes to address us.

MISS BOWDEN:* MR. PRESIDENT, LADIES AND GENTLEMEN: As I am much interested in the teaching of speech to the deaf I would like to make a few remarks about myself. When I was a little girl of two-and-a-half years old, I lost my hearing. I always attended the Public Schools with my sister, and the teachers noticed my condition. They took pains to teach me speech. I took pleasure in speaking to the teachers. When I was about twelve years old, my mother made inquiries into keeping my speech up. I was sent to a Deaf-Mute Institution. At the time of my entrance the instruction of speech was given up. I gradually lost all of my speech. The Northampton School was founded one year after I left school. I left school, and went home and lost all I had been taught after being there one year. Now I regret very much that I cannot speak at all. Since my arrival here I have taken some lessons in speech, and I think as long as I remain here I will be a pure oralist. I have two little girls who speak. They have been asked why I do not learn to speak. I am rather too old to learn. Since I have been here and seen the deaf speaking, I am much tempted to take lessons when I get home. I have been so much nterested in the school exercises here, and I have enjoyed myself

*Miss Bowden used the Manual alphabet in delivering her address.

watching the deaf children speak; I think it is very wonderful. I wish you success.

MR. PRESIDENT: We should be very glad to hear from any other of our deaf friends to-day who may desire to say a few words.

MR. DAVIDSON: I think that this idea of having the deaf relate their experiences is a very good one, and that it is the duty of each to tell all about himself that may be of any help to others. I began to grow deaf when about eight years of age, I believe, but I continued in the hearing schools until I was about thirteen. I was at first able to hear well enough to get along fairly well, and then I was obliged to rely to some extent on lip reading. At thirteen, I went to Philadelphia. I was put in a sign class. There was no pure oral instruction then and we had what was known as the Combined Method. I had some oral instruction,—about one-half hour or one hour a day. I desired to learn to read the lips well, as I had heard that it could be done, so I went to the principal and requested him to establish a pure oral class in the school. There were a number of young men and women there who had lost their hearing at an advanced age, several such entering at the same time I did, and they joined in my request. This will show I am not such a recent convert to oralism as some have said.

The principal did not believe in pure oralism, and refused to do as we wished. At the end of the school year, when I went home and began to speak, my mother expressed surprise at the change in my voice. I had lost considerable facility in speech. When I entered the school I could talk as well as any one. When I left, after three years, my speech was rather poor, I believe. There were very few opportunities to speak—only an occasional word in the school-room to the teacher. Then I went to college. They had no oral instruction there at the time, except in the Primary Department, with which the college students had nothing to do. The young men went into society in the city, to some extent, and in that way I managed to keep up my speech, but I found such difficulty in reading the lips that I taught my friends to spell. One young man, whom I knew there, almost lost his power of speech, although he lost his hearing when quite old—sixteen I think. He went into society a great deal, more than I did, and more than most other students, as he was considerable of a ladies' man, but somehow he lost much of his speech. I think that the reason for it is that as a man's mind goes on expanding, there must be

an enlarged vocabulary to express his ideas. As he enlarges his vocabulary he must learn to pronounce the new words, and if he does not, when he speaks them, he pronounces them wrong. Then people laugh at him, and he becomes discouraged and stops speaking. This young man still talks, but his voice is very harsh, and when he gets among cultured people I believe he always writes. At one time I was often tempted to do this, and hesitated about taking up conversation with others, for it is not pleasant to have people smile at one's blunders; but I resisted the temptation by never carrying a pad or pencil with me.

I think that there should be a pure oral college for the deaf; or at least pure oral instruction for those who desire it in the present college. Pure oral instruction should not end with the primary schools; it should go through the whole school and college course. The present method in Washington is doing very good work they say, but my experience in school is that half an hour or an hour's speech a day amounts to little. Instruction *by* speech all day long and all the year round is what is wanted. I have tried from time to time the experiment of having instruction in lip-reading for half an hour a day, for I have been very anxious to learn to read the lips well, but I have never succeeded in doing anything until the past year, when I have been under pure oral instruction (referring to his wife). I went to the Northampton School for a teacher, and I have learned a great deal of lip-reading during the last year. I hope that in the years to come I may learn to read the lips as well as any one on the stage to-day.

MR. PRESIDENT: Are there any other of our friends who desire to address us?

MISS HOADLEY: I went to the Horace Mann School when I was eight years old. I was there about eight or nine years. A year ago last September I went from there to the Berkeley School. It is a private school for the hearing, and has about a hundred and fifty scholars. I was put into the third class of the high school course, with those of my own age. The second year I was promoted into the second class. There I was taught algebra, geography, arithmetic, history, French, physics, literature and Latin. From my experience I can tell you that the deaf can get along just as well as the hearing. There were ten in my class, four girls and six boys. We had an examination one day in physics, and when it was over the teacher came up to give out the report of the examination. He said only four had passed, and that I was one of them. I was very glad. You know physics is very hard, and needs a

great deal of explanation from the teacher, all of which I got from reading his lips; there is no writing done during recitations, but only when we have examinations. I think that showed that the deaf can do just as well as the hearing. I went on and studied French and Latin just as the rest did, and was treated as if I could hear. I enjoyed it very much.

I passed all the examinations, and next year I shall be in the first class, but I want very much to get a higher education, so I am going to take the college course. I have already begun it by taking up French and Latin. I think it will take about two years to prepare for college. There is a college for the deaf in Washington, but I do not want to go there, as they use the sign language. I have never learned the sign language, and do not wish to. I get along better with hearing people, as I can read their lips and talk with them with very little trouble. I have thought a great many times that it is very much better to learn to talk, as there are so few people who can understand the sign language. I am always glad to think that whoever I meet I can talk with them, and they with me, by the use of the lips alone. If I could not talk, I should have to learn the sign language, then my whole family would have to learn it, too, and also my friends, therefore, I do not think I should be happy. I do not want to go to a college for the deaf, as I would then have to stop talking. I want to go to a college like Wellesley or Smith, and get more education as other people do. I am very anxious to get a higher education.

MR. BOOTH: You did not tell us how old you were when you became deaf.

MISS HOADLEY: I forgot that; I was three years old when I became deaf.

THE PRESIDENT: Can you hear at all now?

A. I cannot hear a sound, and I have no idea what sound is. I was three years old in March, and the following July I became deaf by a blow on the head from a swing in motion. It destroyed the nerve which made me hear; since then I have never heard a word, and I have no idea what sound is. My mother was afraid after I became deaf that I would lose my speech, so she made me talk as much as possible, and sent me to school with hearing children. She talked to me so that I would have to talk too, in order to answer her, and that kept me from losing my speech. If more mothers would do the same, perhaps there would be no need of the use of the sign language.

THE PRESIDENT: You are now at the Berkeley School, in Boston, with hearing and speaking persons? Do you understand what your friends say and do they understand you, and are you among hearing young ladies there?

A. I am with them all the time, and go around with them in school. Sometimes in mathematics, when the teacher explains a problem and the recitation is over, some of the girls would come to me to have me explain the problems to them. I sit where I can see the teacher, but it is not necessary to be very close to him. Sometimes he would tell about a problem in geometry, then he would suddenly ask a question about it, and would often call upon me for the answer. I have not decided what college I will attend, but think I will go to Wellesley.

MR. CROUTER: If there was an oral college for the deaf would you prefer going to it, or would you prefer to go to a college for the hearing?

A. I think I would rather go to one for the hearing, because I have had the experience in that line, but I think it would be a good plan to have an oral school, as I think a great many more would try for a higher education.

THE PRESIDENT: What would you prefer, an oral, or an ordinary college. If we had an oral college for the deaf, would you prefer the oral, or the university?

A. I would prefer going to an ordinary college, as I think it is possible for the deaf to get along as well as the hearing.

MR. CROUTER: Suppose there were ten or fifteen young ladies in this school with you, and all of them deaf. Do you think they could get the lectures and explanations from the teachers' lips as you do?

A. I think they could if given a chance.

Q. Are you called upon to repeat problems and recite in class as your hearing classmates are?

A. I am just the same; the teacher calls me up and tells me to work out a problem on the board, before the class.

Q. What studies are you taking now?

A. Algebra, geometry, arithmetic, French, Latin, literature and reading.

Q. Do you have the same recitations precisely?

A. Precisely the same.

Q. Do you not think that your teacher favors you a little?

A. No, I know he does not. From what I have been through I do not believe that only a part of the deaf can do it, but I think

that every one on this earth can, if people would only give them a chance. When they become deaf, their parents often think, O, well, I do not believe they can do anything at all, so they leave them alone. They are left to their own thoughts. My mother made me go with the hearing children.

MR. CROUTER: But all mothers are not alike.

A. I think if it were printed and talked more about and more people knew more about it that perhaps more mothers would do so.

Q. Suppose that at the College for the Deaf in Washington, oral recitations were permitted—you could recite orally, your instruction would be oral, not by spelling or writing—would you prefer going to Wellesley or Smith College, rather than the College in Washington?

A. I would rather go to Wellesley.

Q. There are young gentlemen at the College at Washington?

A. That makes no difference; I do not want to go to college to meet young gentlemen, but to get a higher education, that's what I am after.

Q. I thought the presence of the gentlemen might be an assistance to you?

A. I had rather go where there are none.

MR. DAVIDSON: I would like to ask the young lady whether she understood what has been said from the platform, when seated in the audience?

MISS HOADLEY: I understood a little; I could not understand any of the signs which the deaf used. Miss Fuller told me something of what was being said while they were talking through them.

Q. Could you follow the lectures in the hearing university?

A. I think I could.

THE PRESIDENT: The argument is that if you could not understand what was said on this platform, how can you understand what goes on in Wellesley College?

A. I think I could understand them in Wellesley, because I shall be with them all the time, I shall get used to them, and will get a great deal of what they say.

MR. BOOTH: She has not said she did not understand those who spoke, but those who talked in signs. Did you understand Dr. Allen and Dr. Greene?

MISS HOADLEY: I understood a little of what Dr. Greene said. I thought I understood him when he said, "I have a new desk." One Sunday I was at church with my parents. We had an old gentleman eighty-two years of age to preach for us. I had never

seen him preach before, but the first thing I thought of was that I could understand him if I tried. I was able to follow him during the greater part of the sermon, and when he first gave out the text I understood what it was. He told us about the Messiahship of Jesus Christ, and he wanted to give the proofs of it. He told the story of the blind man, and I could follow that from the beginning to the end. He also told another about five loaves and two fishes, and the man taking up his bed and walking. I went to Sunday-school afterwards and my teacher asked the class if they could tell what the six proofs were that were given out in the sermon. No one said anything for a long time and during that time I could have told four or five of them, only I did not want to.

DR. NOYES: I want to take occasion to tell her the substance of a letter which I have received this morning from Superintendent Swiler. He says, in the first place, "I much regret my inability to attend this Convention." Will you be kind enough to repeat it?

MISS HOADLEY: "In the first place, 'I much regret my inability to attend the Convention.'"

DR. NOYES: "Affairs at home demand my attention."

MISS HOADLEY: "Affairs at home demand my attention."

DR. NOYES: "I have been reappointed Superintendent of the Wisconsin School."

MISS HOADLEY: "I have been reappointed Superintendent of the Wisconsin School."

(Dr. Noyes continued the reading of the letter, and Miss Hoadley repeated without mistake every sentence as it was uttered.)

DR. NOYES: This is sufficient to satisfy me. She is either a remarkable lip reader, or I have special facility in communicating with her.

MISS MCDOWELL: I would like to say it seems to me that her understanding of Dr. Noyes was fully equal to the spoken interpretation of the address made in signs this morning.

DR. NOYES: I think it was superior.

THE PRESIDENT: You know that Miss Hoadley is in the Berkeley School for hearing. Miss Fuller encourages her pupils to go to hearing schools. She has been in the Berkeley School and wants to get a higher education, and she proposes to see whether she can get it at Wellesley.

DR. NOYES: I am delighted to see how well you can read the lips. I wish that you would go to Minnesota, and I assure you that you would have an opportunity to take a course in the university.

MISS HOADLEY: Thank you very much.

DR. NOYES: If you come to Minnesota, I give you my word that you shall have a university education; and I give my word that if all my pupils could read and speak as well as you do we would have a pure oral school.

MR. ELMENDORF: I should like to try an experiment, please. I want to show that it is not necessary to stand so near her. If I stand at this distance, in a good light, she can readily read my lips. Miss Hoadley, do you have any trouble in understanding me?

MISS HOADLEY: Not at all.

MR. ELMENDORF: I am standing here in a difficult light for the deaf to read my lips, as I am back to it; can you see my lips well?

MISS HOADLEY: Sometimes there is a shadow on the mouth.

MR. ELMENDORF: I have been through college myself, and I never sat so far from my professor as she is from me. I do not see why she cannot understand her professor. I do not think you have any difficulty in seeing me.

MISS HOADLEY: I understand you perfectly.

THE PRESIDENT: We are very much obliged to you, and I have no doubt that what you have shown us will help us a great deal.

MISS HOADLEY: I am glad if I have been able to help you.

MR. ELMENDORF: Do you have any difficulty in understanding gentlemen who have mustaches?

MISS HOADLEY: Sometimes I do, when they are very thick and long, so that they cover the mouth.

MR. ELMENDORF: Do you understand me now? (He having his fingers partly over his mouth.)

MISS HOADLEY: Yes, sir.

THE PRESIDENT: Our time has elapsed, and I am thereby warranted in declaring this meeting adjourned until to-morrow.

TUESDAY MORNING, JULY 5.

The President announced a paper by Mr. J. A. Gillespie, Principal of the Nebraska Institute, which was read:

AURAL INSTRCUTION.

I will not on this occasion go back to the beginning of this feature of our work to give a record of it. That is now history.

Aural instruction is the training of the partial hearing of that class of our deaf population which we call semi-deaf, to perceive sound.

It is either the cultivation of the perceptive faculty, or it is the development of the hearing power, or both; in some cases both.

In this paper I desire to be understood, when speaking of aural training, or aural development, as meaning that the terms imply ability to be instructed to hear and understand language, through the impaired or previously dormant sense of hearing. I wish to be understood by these terms as meaning—teaching semi-deaf children to hear, to understand English language addressed to the ear. It does not consider the scientific question as to whether the organs of hearing develop, only the fact that hearing is taught. This matter pertains, of course, to a limited number of the deaf. That this is the only method of reaching this class, or that a better may not be brought forth, we do not claim; we know of none better. What we wish to emphasize is that this class can be reached this way. In the former estimates of the number of persons who could be benefited by this plan, fifteen per cent. was considered fair. We have no reason to decrease, but rather to increase this number. There is an impression in some minds that in some of our western schools there is a greater number of partially deaf children than in other schools differently located. This may be true, but recent investigations show the number to be as great in the State of Indiana as in Colorado. These schools are widely separated as to distance and altitude, though not so different in latitude. Why, that in one locality, of a hundred deaf persons, all should be stone deaf, and in another locality, of one hundred deaf persons so called, from fifteen to twenty are found with varying degrees of hearing, is a question not easily understood, and which demands our most serious consideration. My belief is that, not only are there fifteen per cent., but if persistent effort were made in all schools for the deaf to discover the semi-deaf, twenty per cent. would be found. I know that this statement will be challenged, nevertheless it is made in the full belief that the right kind of investigation will establish

it as a fact. Some of our friends have made efforts in this direction and have not found sufficient good in it to justify the expenditure of time and money, and have abandoned it. Others have lacked facilities to make the proper experiments and have not put forth any exertion on this line. And some have not considered it, being satisfied with the tried and true ways, which they know have yielded good results.

In a case before a court many witnesses are called, the evidence is taken for, and against; by this evidence the case is adjudged by the jury. One hundred witnesses may be called, ninety-eight of these after a rigid examination and cross-examination testify that they did not see the state of facts as set forth in the charge. Two witnesses testify that they did see, that the charge as made is true, that they were eye-witnesses. This is positive, unequivocal proof.

Will not their evidence weigh more in the minds of the jury and have more bearing in the verdict to be rendered than the evidence of the great majority who did not see, and did not know these things?

Aural instruction is on trial to-day. You are the jury. The evidence to be presented to you is unprejudiced and impartial, it is for, and against. Those, if there be any, who are opposed to this method of treating the semi-deaf, and who have a better way will meet with every encouragement and assistance from aural instructors—when the plan is presented, but until they do bring forth a better way we must insist that this is the best. We mean by teaching the semi-deaf to hear, that we awaken in them a sense of which they at present do not know they possess; if they do know it, they do not know how to use it. We mean by it to cultivate this sense up to this time dormant, and utilize it in the education of this class of the deaf. We mean by it also, that many young children who are considered deaf, and are consigned to a future fraught with all the disadvantages coming from deafness, may be saved from this by early aural instruction before deafness is confirmed, and the organs are flexible, and the chances for improvement greater; and thus they would never reach a school for the deaf at all. We mean by it the graduation from our schools for the deaf, of a majority of these persons, as hard of hearing speaking people, with the mind cultivated, with a command of English language equal to the best by any other method, and with the addition to all the acquisitions by any other, this sense of hearing, though imperfect it may be.

It is time for this thought to be made less prominent in our work for the deaf than it now is, that we pursue certain lines in early educational work manually as designed for mental development; that speech does not belong, but that the latter is taught simply as an accomplishment, thus separating speech teaching from intellectual training, either by oral or aural methods. Mental discipline comes from mind action, mind using. To say that mental development has suffered, in the case of the aural and oral pupils with whom we have had to do, we will not for one moment concede. If there be any difference it is on the other side; if we were making any claims for superiority on this line, we should make the opposite claim. We do not secure aural power and speech at the expense of mental development, but in addition to it. It is a very means of mental discipline. When we as professionals are ready to say that the study of history, physiology or botany is an accomplishment, then we will be ready to say that aural and oral work is an accomplishment, rather than a means of general mental development. Again, some will say that the hearing power is not increased, that what is understood by aural development is a myth, that to develop a weakened nerve is unscientific, also that what does take place is that the perceptive faculties are simply awakened by constant direction of the attention. Be it so.

We care not upon which side our critic may place himself, the pupil, by this process, is taught to hear, and that is what we seek.

It is our experience, and the testimony goes to show that in many cases the actual hearing power does increase, that there is a constant improvement. In other cases aural power remains constant, but the ability to use it increases. How is this work begun and carried on?

First find out if your new pupil has any hearing. Do this by means of a bell, a musical instrument, tuning fork, the voice, any way that ingenuity may suggest. Then how much, whether he has enough to distinguish vowel sounds or not, whether he can tell one from another, if not, that he will be able to tell at least how many times the sound was made. I have asked the teacher of our aural class to give a description of her work. She says:

In the first lessons the point is to make them associate sounds with objects. If there is considerable hearing they can start in with voice sounds, but a portion of the present class could not tell any difference between such sounds, and required much preliminary drill before even the vowel sounds made any impression. I showed them my bell and sounded it in each one's ear, and made them ring

it in one another's ears, and they found that the sound belonged to that object. The next sound was made by striking a pan with a table knife. That was two sounds taught. Then without letting them see which, I sounded the bell and most of them told me correctly which of the two objects had made the noise. For the benefit of those who did not get it right, the showing and sounding had to be done all over again—and in fact, had to be repeated many times before one could be sure that they would know which object was struck. These two sounds fixed, a tin whistle was added, and, being very shrill was easily distinguished from the other two. Next a note on the piano, then a drum, then the voice in the sound as produced by the back wide. By this time they began to notice the voice, to which they had paid no attention until their perception had been aroused by the preceding drill. Then they began to learn speech. I said *a* in their ears, showed them my mouth, had them imitate its position and if they could not, put their tongue in position for them—and had them give the sound. When they gave it correctly let them say it in their own ears, by means of the ear trumpet. Then they discovered something—that they could hear their own and one another's voices.

Next they learn *o*. Now we have two voice sounds, and they could hear and repeat each. Then they had all the back vowels. Each was presented to the ear—there is no difficulty in distinguishing the difference of sound, and pointing out which one had been said. I draw diagrams of positions and correct by these and by manipulating the tongue. Then they practice this list of sounds themselves, counting it quite a feat to say them on the fingers of the left hand.

Next we teach *e*, a sound easily heard, but do not follow down to *a*, as we can always get a word containing a short sound without teaching that one alone. I do not often teach the short sounds for the sake of getting a word, but for the purpose of making up a regular drill exercise. Thus when I am showing pictures of the front vowels and drilling on the movements of the tongue, I teach those sounds just to show that the mouth opens gradually from *e* to *a*, and that each degree of aperture produces a different sound.

Next we combine—

a e—I, eye

a e—oy

e o—you

o e—we

Next, consonants—*v*, and we have a sentence, "I love you."

At the end of the first month after we have started in speech, they can repeat after you a large number of sentences, such as "I love you," "I love papa," "I have two arms," "You have two arms."

We teach them to write everything they learn to speak, and no more, so that their spoken and their written vocabulary are equal. Last year's class made up a working vocabulary of three hundred and forty-three words. That is, they heard, spoke, wrote and used them in sentences, such as

Nouns. Single and Plural of
- Parts of body.
- Names of animals.
- Things to eat and to wear.
- Objects in the school-room.
- Objects in pictures.
- Names of class-mates and teachers.
- Possessives.

Verbs.
- Transitive. Tied, untied, looked at, washed, opened, shut, combed, put, gave, ate, took, broke, bit, pushed, dropped, picked up, lit, blew out, shook, kissed, whipped, have.
- Intransitive. Am, is, are, was, were, ran, walked, jumped, laughed, cried, stood up, sat down, fell down, hopped.

Pronouns.—All the personal pronouns.

Prepositions.—In, on, into, out of, under, behind, to, at, from.

Adjectives.—Colors, numbers to one hundred, good, bad, new, old, sweet, sour, well, happy, cross, muddy, clean.

Conjunction.—And.

The most remarkable case of aural development which has come under my observation, is that of a young man who has been under instruction twenty-five months. He had been in the public schools for some time, but could get no benefit from them except in arithmetic. He came to us without the ability to put two words together, although he understood in a way what was said to him.

My diagnosis of his case was—that he heard a sort of a jumble of sounds of which he was able to understand the general meaning, though he had not sufficient hearing to distinguish the words which made up the sentence. He did not appreciate the fact that our language was made up of sounds and words. Working upon this theory, the teacher proceeded to dissect the language and give it to him by sounds and words. He soon had the key to the

whole scheme and his progress has been most remarkable. He can say most anything he pleases. He writes well and has made several speeches before the public, and always so that he could be easily understood. He uses his speech and hearing all the time when he is with those who talk. He is a good example of what we mean by an aurally instructed pupil, of that class, of whom there are many, who have not sufficient hearing to be educated in the public schools. He has been taught to hear. While he is a somewhat remarkable case, others similar will be found in any institution in the country which has one hundred pupils or more.

In order to get a general idea of the status of aural training, I prepared a blank form and sent to all the public and private schools in the country as catalogued in the *Annals*—seventy-seven in all—asking for certain data. I have received fifty-six replies. Of these thirty have reported as having made no investigation on this line for the last three years.

Nineteen have made examinations as to hearing.

Number of pupils under aural instruction, two hundred and seventy-five.

Number who receive aural training and pursue their school work by the manual method, sixty-five.

Number who receive aural instruction and pursue their school work by the oral method, seventy-five.

Number who pursue their school work entirely by means of the hearing without regard to lip-reading, sixty-seven.

Percentage of hearing (from three per cent. to sixty per cent.), average twenty-one and a half.

Number of Superintendents who report having made a trial of work and have not found satisfactory results, two.

Number of Superintendents who speak encouragingly and will add a department or organize classes as soon as possible, seven.

Number of Superintendents who are in sympathy as expressed by letter or on blank, and are working on this line, twenty-one.

Returns have not been received from the following institutions: New York, Maryland, West Virginia, Western New York, New Jersey, Northern New York.

It will be seen from the above that aural instruction is taking root and becoming an established method of treating this class of children. A great preponderance of the evidence, you observe, is in its favor. As to facts and opinions heretofore expressed, I refer to the publication by the Volta Bureau of the evidence before the

Royal Commission, as given through Dr. Bell, of various members of the profession who have given this matter much attention.

This same Royal Commission has recommended that all deaf children be examined as to their hearing power and that all who have hearing be taught in pure oral schools. In the reports submitted it would seem that the oral schools do not give as much attention to aural development as some of the so-called combined schools. This, perhaps, arises from their great anxiety to teach absolute reliance upon speech reading.

The scheme for the development of this latent hearing is right, and though some have tried it and it did not prove successful, others have tried it and have succeeded. The lack of success in nearly every case is not in the theory, but in the application of it. It will not do to toss the matter aside because we do not believe in aural development, and apply the term to the supposable impossible development of hearing power—not at all. No remedy, however good, will do much in eradicating disease if improperly applied. Neither must it be thrown aside because growth is slow. It must be remembered that we are not dealing with quick, active hearing, but with latent hearing. It is sluggish and slow. It must be awakened, and of necessity will develop slowly. It takes time for the oak to mature from the acorn. Unreasonable success must not be expected and disappointment will not come. It will not do to lay aside effort because it takes time, with the interrogatory which means negation, "If he can hear why can't he speak?" I answer, "He cannot talk because he does hear well enough, and does not know how to use the aural power he has." If an educated deaf mute were to be restored to perfect hearing in an instant, he would not be able to understand or speak a single word. Why? Because he has not learned language by sound, but by sight. He would have to be taught to hear—to use his hearing.

So must the semi-deaf be taught. In the January, 1892, *Annals* we find there were present during the year in all the schools for the deaf nine thousand two hundred and thirty-two pupils. Placing the number of semi-deaf at our lowest estimate, fifteen per cent., we have one thousand three hundred and eighty-four who should be instructed with a view to utilizing this wasted power in their education, and providing them with this additional sense. And this does not take into consideration the great number among those too young to be in school. It is possible to do this. It is right to do this. It is a mistake not to do it.

One thousand three hundred and eighty-four at the very lowest calculation who ought to receive this instruction, two hundred and seventy-five who do receive it. Duty calls us to take up this work. Justice demands that these persons have the consideration which their condition and their number merit.

This paper was followed by a discussion participated in by the President, Dr. Peet, Dr. Noyes, Mr. Crouter, Miss Yale, and Miss Warren.

Dr. A. Hewson, of Jefferson Medical College, Philadelphia, gave the first of his series of lectures on the "Physiology of the Ear." (This lecture will be found with the others of the series in the part of this report devoted to "Lectures.")

The following paper by Miss Caroline A. Yale was read:

HOW CAN WE BEST FIT OURSELVES TO TEACH SPEECH TO THE DEAF?

This question is one that has forced itself upon many of us as we have thoughtfully observed the results of our own efforts in this direction, and it has been presented again and again to all of us, who have been teachers of speech for any number of years, by young persons eager to do the work, but hesitating to enter upon this new, strange field of labor without some special preparation for it.

Surely no one among us, be his years of service five or twenty-five, feels himself fully competent to answer this question. We propose, however, briefly to suggest some means of culture which have under our own observation secured higher efficiency in work.

The Normal Schools of our various States have no departments in which teachers may fit themselves for this special work, for which most assuredly a teacher needs special training. Most of us who are at all experienced in the work feel that we blundered into it; have groped our way along with such meagre scraps of instruction as made our needs only more keenly felt, and now stand busy, active, but not yet skilled workmen, with only imperfect results to show for all our labor. The character of these results is in part attributable to the imperfection of the material in which we work. If not absolutely perfect speech is acquired by many of us who have full power of hearing, surely it is quite unwarrantable to suppose that our pupils can acquire this perfect speech without the aid of hearing. When the wisest have done their best, results will without doubt still show that our pupils do not hear. The question before us to-day by its very wording suggests this, How can we fit ourselves to give to a child, destitute of hearing, speech—the best speech *possible*—under existing limitations?

In attempting to answer this question we assume that a teacher intending to enter upon this work should have received as broad and thorough mental culture as the best trained teachers of hearing pupils. It may be that if he is to give only mechanical articulation to pupils, less would suffice; but if he is to turn mechanical articulation into speech, and is to be responsible as well for mental development as for the mere giving of the power of vocal utterance, the breadth of his mental culture cannot exceed his needs. One who stands among the highest in our profession now was heard to say not long since, that the happiest year of his life was the first he spent in this work, having gone directly from a theological seminary to a class of little children in their first year in school.

Of the subjects for special study, *first* in natural order is the *instrument of speech.* A thorough knowledge of the anatomy and physiology of the vocal organs should be gained. This may be done in part in the college lecture-room or the class-room of the Normal School, but usually the study there is not sufficiently full for our purpose. We need to make a more exhaustive study of these special organs than is usual in the study of general human anatomy and physiology. It is not enough for the teacher of a deaf child to know that its voice is disagreeable. He should know what part of the vocal organs is misshapen or misused—how misshapen, how misused. He should be able voluntarily to imitate the false muscular action of the child and contrast it with the correct action; showing the child which is valuable and which is valueless—using for this purpose the child's senses of touch and sight, using diagrams or symbols wherever they may help, but never allowing himself to forget that diagrams and symbols are but pictures of that which may be best studied in the teacher's mouth itself, if the pupil's sense of sight and touch have been well developed.

Second.—A teacher should be familiar with the *laws of sound.* When the principles of vibration and resonance are more familiar to the teacher of speaking deaf children we feel assured better voices will result.

Third.—The teacher's own sense of hearing should, from the outset, be most persistently cultivated. If it were only the pupils in our school-rooms whose sense of hearing was defective and uncultivated, the case would be much simpler than it now is. How often are we greeted with the request for help from a teacher who realizes that a sound is wrong, but cannot tell what causes the defect. This training of the teacher's own hearing, until she can detect differences in quality of voice, recognize general governing

defects as well as defective positions and actions, is of the greatest importance.

A *fourth* topic for the teacher's study should be the exact *formation of each elementary sound.* This study cannot be made too thorough and critical. The adjustment of the organs, the contour of each, the size and shape of apertures, and the character of the action of each organ should become most familiar. To this end the use of diagrams is of much value, as a means of representing varying positions, and as in themselves abbreviated diagrams no aid is to be compared with a close study of the symbols of Prof. Alexander Melville Bell's "System of Visible Speech." So long as these symbols are kept pictorial in their significance their value is immeasurable.

Fifth.—The various methods by which each sound may be developed from the pupil should be as carefully studied. It is not enough to know just what position the child's organs should assume, but the teacher should know by what means those organs will most quickly gain the ability to assume that position at will. Uncertain action on the part of the teacher causes delay and lack of confidence on the part of the pupil. He should have at his command a knowledge of several ways of developing each sound, so that if in any case one method fails another may be used. Simple imitation may suffice in some cases, but often analogy, contrast, or manipulation will greatly expedite the work. If the teacher knows which of these helps to use in any given case, she is saved much loss of time and labor. *Methods of acquiring accurate, easy and rapid combinations* and proper accent should also be carefully studied. Intelligibility of speech depends certainly as much on these as on the perfection of elementary sounds, and yet these can by no means be so easily acquired. Only the most careful study of such matters as the allowance to be made for the distance to be passed over in the mechanical action of a combination; the modifying effect on a position of those preceding and following; the *un*accenting of syllables, by which the accented syllable is thrown into prominence—these and many others are the unnamed and unnamable subjects demanding long, thorough study.

Confining ourselves to the original scope of the work of this Association, we omit all mention of study of methods of preparatory development, of systems of teaching language, and of methods of general mental culture. We omit all reference to the study of the history of the instruction of the deaf and limit ourselves to so-called articulation work.

Let us, then, who are already engaged in teaching, consider how we can gain additional knowledge in the directions we have indicated. How can we make up to ourselves for the lack of previous systematic training? Certainly much valuable knowledge of the anatomy and physiology of the vocal organs can be obtained from books and the study of the manikin, charts and models, but most from the study of the living subject. Any one of the fuller text-books on anatomy may be used. We would name Gray's as containing excellent drawings of the vocal organs. Other books containing valuable aid in this part of our study are Browne's "Voice, Song and Speech;" "The Diaphragm and Its Functions," by Kitchen; "The Throat and Its Functions," by Elsberg; "Hygiene of the Voice, Its Physiology and Anatomy," by Durant; and "Gymnastics of the Voice," by Gultmann. Tyndall's treatise, entitled "On Sound," will be a sufficient guide for study in *this* direction. Much useful information is also contained in Browne's "Voice, Song and Speech," previously mentioned.

Our third suggestion was that the hearing of the teacher should be cultivated. Two or more teachers could form a class for self-culture in this direction. Let them attempt to remember and reproduce the defective sounds noted in the speech of their pupils, and together seek for the cause of the defect. Let them take a single sound and study its various defects. If there be one more experienced than the others, let him take the place of leader. Let him give frequent exercises in imitating peculiar qualities of voice; asking members of the class to describe the defective action of the vocal organs by which this is produced. Such general modifications of speech as would result from the habitual raising or depressing of certain parts of the tongue; from laxity, from compression, as well as correct and incorrect elements, should be studied in the same way. Each teacher in his class-room should make a careful study of the peculiarities of voice and imperfect sounds, never attempting to correct an error until he is sure what it is, for then only can he hope to make the pupil understand and correct it.

In order to gain a knowledge of the formation and development of English sounds, first of all study Visible Speech. Prof. Alexander Melville Bell's "Sounds and Their Relations" will prove a convenient manual for this. At the same time, one should study thoroughly "Principles of Speech and Dictionary of Sounds," by the same author. Prof. Porter's preface to the new "International Dictionary;" Prof. Whitney's to "The Century Dictionary," and the introduction to "Soule and Wheeler's Manual of English Pro-

nunciation and Spelling" are worthy to be used as text-books. Prof. Bell has also provided in his "Elocutionary Manual" not a little help on subjects rarely treated of elsewhere.

The books thus far named are to be procured in this country at moderate cost. Dr. Thomas Arnold, of Northampton, England, has published two volumes, entitled "The Education of Deaf Mutes. A Manual for Teachers," which contains much that is valuable. This work is the most complete of its kind in the English language. The literature of the profession in German, French and Italian contains much that is helpful, but our purpose has been to suggest only such sources of help as were easily accessible to all. Times have changed; there is no excuse in these later days for an earnest soul to go on unaided. Helpful books are being published, and best of all, this Association is, through its publications and its meetings, promoting the teaching of speech to the deaf.

Afternoon Meeting.

The afternoon meeting was devoted to the School of Practice, conducted by Miss Yale (see "School of Practice"), and to a lesson in Visible Speech by Dr. Bell (review of lessons in Report of 1892).

WEDNESDAY, JULY 6.

The following paper was read by Mr. Edmund Lyon:

PHONETICS.

Mr. President and Members of the Association: Phonetics must ever be the most interesting and important of sciences for all articulation teachers, since it shows how elementary sounds are produced, and also how these elementary sounds are combined or united in spoken words.

It is my present purpose to consider the combination of elementary sounds in spoken words, and to show how a word may be diagramed so as to exhibit its phonetic elements, as well as the relation which they sustain to one another. The elementary sounds in a word touch, overlap, or are welded together by transitional sounds in such a way that each element is modified to a greater or less degree by the associated elements. In some instances the union is so intimate or the blending so nice that it is impossible for the ear to determine the extent of this reciprocal influence. The method

of diagraming which is about to be described, affords an easy way for studying and analyzing these reciprocal relations which otherwise might be confusing and difficult of comprehension.

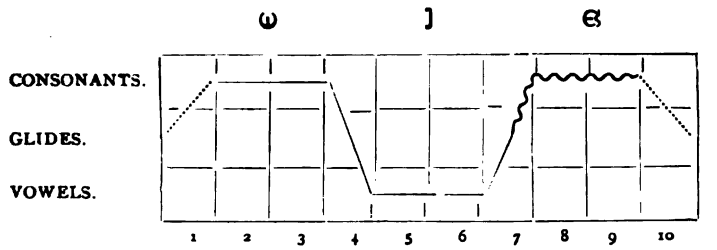
For the purpose of diagraming a word phonetically we provide a staff consisting of four horizontal lines and the three intervening spaces. The upper space, as will be presently seen, is reserved for consonants, the middle space for glides, and the lower space for vowels. The staff is crossed at equal distances by perpendicular lines. As the word-outline when projected on the staff has a uniform progression, from left to right, the sections between these perpendicular lines serve to indicate equal intervals of time.

We have now to consider the rules which are observed in forming and locating the word-outline upon the staff.

We know that a word may be composed of several elementary sounds, produced by momentarily *held* positions of the vocal organs, with here and there an intervening sound which is produced by a gradual transition from one elementary sound to another; and that there may be in the word oral and nasal, vocal and non-vocal, sounds. In the word-outline horizontal portions indicate *held* positions; slanting portions, *gradual transitions;* wavy portions, *nasality;* solid lines represent *vocal* sounds; and dotted lines, *non-vocal* sounds.

It is found convenient in diagraming words to allow two intervals of time for each held position, and a single interval for each gradual transition.

We are now prepared to diagram a few words to illustrate the principles already enunciated. If the changes from consonant to vowel and from vowel to consonant in the word *rung* are assumed to be gradual transitions, we shall have the following outline:



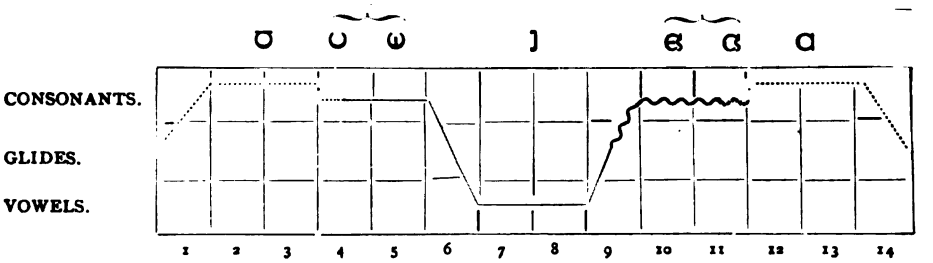
During interval 1 the vocal organs are taking position to produce the first element; this is sometimes called the *on-glide*. Vocalization begins with the beginning of interval 2 and continues to the end of interval 9. During intervals 2 and 3 the first element is held; during interval 4 there is a gradual transition; during intervals 5

and 6 the second element is held; during interval 7 there is a gradual transition; during intervals 8 and 9 the third element is held; and during interval 10 there is a non-vocal finish which is sometimes called the *off-glide*.

It is quite interesting to note how nasality develops during the latter part of the gradual transition from the second to the third element.

If we had assumed the change from the first element to the second to be an immediate transition, then the second element would have been indicated on the diagram as beginning with interval 4, or at the instant that the first element ends.

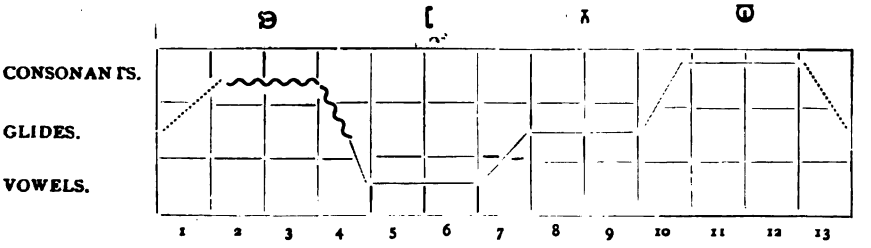
We will now diagram a word in which there are non-vocal elements. We will take the word *trunk*, because it embodies the word just diagramed, and will enable us by a comparison of word-outlines to note the effect produced by the addition of non-vocal elements. If we assume that there are but two gradual transitions, and that they are on either side of the vowel—the transitions from the first to second consonant, and from the third to the fourth consonant being immediate transitions—we shall have the following outline:



Shut consonants are indicated near the upper portion of the consonant zone, and open consonants near the central portion of the consonant zone. This distinction is made partly for the sake of greater clearness and partly that the word outline, by approaching and receding from the upper line of the staff, may suggest the action of the vocal organs in the production of the represented word. During interval 1 we have, as in the first diagram, a representation of the *on-glide*. During intervals 2 and 3, the first element is held; during intervals 4 and 5, the second element is held. As the second element begins, according to our hypothesis, at the very instant the first element terminates, it is united to that element by a perpendicular line, which indicates an immediate transition. During interval 6, there is a gradual transition from consonant to vowel; during intervals 7 and 8, the third element is

held; during interval 9, there is a gradual transition from vowel to consonant; during intervals 10 and 11, the fourth element is held; during intervals 12 and 13, the fifth element is held; and during interval 14, we have represented the *off-glide*. As regards vocality there is a marked change in the outline of the word *rung* when it is embodied in the outline of the word *trunk*. We have already seen that in the outline of the word *rung*, vocality begins with the beginning of the second interval and continues through to the end of the ninth. When, however, we combine the word *rung* with non-vocal initial and final consonants, so as to form the word *trunk*, we at once detect the influence of these non-vocal consonants upon the adjoining elements. The first element being wholly non-vocal, and the transition from the first to the second element being an immediate transition, voice cannot be given until after the second position is assumed, and the second element (*r*) is consequently robbed of a portion of its vocality. A similar relation exists between the fourth and fifth elements; the fifth element (*k*) causing the element which immediately precedes it to surrender a portion of its vocality. Consequently the second and fourth elements in the word *trunk* are, so far as voice is concerned, duplex in their nature, one portion being vocal and the other portion non-vocal. The peculiar duplex vocal character of these elements is clearly illustrated in the diagram.

In order to illustrate the manner of representing diphthongs, we will diagram the word *made*. If we assume that all the transitions which unite the several elements are gradual, we shall have the following outline:



No special comment is required in regard to this outline, as the principles which govern its graphic representation have already been fully explained.

Before undertaking to diagram a word phonetically it is necessary not only to determine the elements which enter into the word, but also to determine in what manner those elementary sounds are united the one to the other; in other words, whether the transitions

between the several elements are gradual or are immediate and instantaneous. I have worked out certain rules and expressions as bases for determining under exactly what circumstances and conditions these transitions are necessarily instantaneous, and under what circumstances and conditions they are gradual, but it is not possible for me to call your attention to them at this time.

Dr. Hewson delivered his second lecture on the "Anatomy and Physiology of the Larynx, Pharynx and Mouth." (This lecture will be found, with the others of the series, in the part of this Report devoted to "Lectures.")

Afternoon Meeting.

The afternoon meeting was devoted to the School of Practice, conducted by Miss Yale (see "School of Practice"), and to a lesson in Visible Speech, by Dr. Bell, (review of lessons in Report of 1892).

Evening Business Meeting.

The President called upon the Secretary to report any business he had in hand.

The Secretary: Letters have been received from the following members expressing regret that they are unable to be present at the meeting:

Prof. Samuel Porter,
Hon. L. J. Dudley.
Sister Charles of the Providence Superior,
Dr. M. Anagnos,
Mr. Theo. L. Moses,
Dr. J. C. Gordon,
Dr. Job Williams,
Dr. G. O. Fay,
Mr. W. Kendall,
Mr. E. B. Nelson,
Hon. F. B. Sanborn,
Mr. Jas Simpson,
Mr. S. T. Walker,
Mr. Jas. Denison,
Miss H. Mignot,
Sister Mary Anne Burke,
Miss Minnie E. Taylor,
Mr. H. D. Uhlig
Mr. L. Kugler,
Miss Jeanie Lippitt,
Rev. Father Trepainer,
Miss Anna M. Black.
Mr. and Mrs. Jas. P. Burbank,
Miss Frances Barker,
Miss Sophia A. Macmillan,
Miss Jean B. Searls,
Sister Mary of the Sacred Heart,
Miss L. I. Harris,
Mr. J. Fearon,
Mr. E. A. Grosbeck,
Miss Mary McCowan,
Miss Emma Garrett,
Dr. Warring Wilkinson.

The President referred to the proposed exhibit to be made by the American Association at the World's Fair in Chicago, and Mr. Crouter gave a resumé of the plans as they had so far developed.

The President suggested that the time and occasion would be favorable at Chicago for carrying out Mr. Fechheimer's plan for enlarging the membership of the association.

Names were given by different members of persons in different cities who would probably act as members of local committees.

MR. CROUTER: My attention has been called to the reports as compiled from the "American Annals" of the number of pupils taught speech reading through speech teaching in the American schools for the deaf. It seems to me that the table is rather misleading. I need not say to oral teachers that there is a great difference between teaching articulation, and teaching the deaf by and through speech. There is a great difference, and in order to have exact statistics upon this subject I desire to offer the following resolution:

WHEREAS, The statistical tables of schools for the deaf annually published in the "American Annals of the Deaf," present the number of pupils in American schools taught articulation without classification of the number taught by speech methods, be it

Resolved, That the Executive Committee, having in charge the publication of the "American Annals," be requested annually to publish the number of pupils in American schools taught wholly by oral methods, and the number taught in part by oral methods.

Resolution adopted.

Mr. Davidson, chairman of the Committee on Books and Reading, read a report making recommendations.

On motion the report was accepted and the committee was continued with instructions to report at our next annual meeting agreeable to their recommendations.

THURSDAY, JULY 7.

A congratulatory telegram was read from Miss Daisy Way, of Kansas City, after which the following address was made by President E. M. Gallaudet, of the National Deaf-Mute College, at Washington, D. C.:

WHAT CONSTITUTES SUCCESS IN ORAL TEACHING?

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE ASSOCIATION: It gives me great pleasure to be present at this meeting of your Association under the circumstances which have called me here. Not that I should not have come had I not been invited, but it is always gratifying to be wanted, and so it is with especial pleasure that I am here in response to the invitation of your Executive Committee. Before entering on the discussion of the subject which has been announced. I venture to ask the privilege of alluding briefly to my own personal connection with the work of promoting the oral teaching of the deaf in this country.

I hesitate somewhat to make these allusions, which might under certain circumstances seem egotistical, but I trust, Mr. President, that no such charge will be brought against me, for I speak thus of myself only because during the past few years my position in relation to the work of oral teaching has often been seriously misunderstood. It was a matter of no little surprise to me about two weeks ago to receive a copy of one of the most prominent newspapers published in New England, containing an article of some length, written by a prominent official connected with one of the oldest oral schools of this country,—this gentleman being one who has known me and my work intimately for thirty years. In this article he speaks of me in no other words than as being at the head of the "Sign School at Washington," when he is perfectly aware that for twenty-eight years there has been a College for the deaf at Washington, of which I have the honor to have been the founder, and the only President. It is hard to believe him ignorant of the fact that in the Kendall School at Washington, which has been under my charge for thirty-five years, speech is taught to a larger percentage of pupils than in any of the "combined" schools of the country, and he ought to have known, if he did not, that during the past year speech has been taught to every student in the College.

There are those here who understand what my position is in regard to the oral teaching of the deaf in this country, but I should be glad to have it known and remembered by all who are interested in this special work that I stand in the very forefront of those who have promoted this cause in America. I certainly was one of the first—I think I was *the* first—among the heads of the older institutions in this country to advocate the general adoption of speech-teaching, which I did in a report published twenty-five years ago, when I recommended "that an opportunity of learning to speak and read from the lips should be afforded every deaf child." In a publication, which I have just learned through the President will be read to you during the morning, the proofs of which I have in my hand, reference is made to the stand I have taken in regard to the oral teaching of the deaf. An allusion is made to this report of twenty-five years ago, and also of the action of the Conference of Principals, which met in Washington in 1868, when a resolution I had the honor of presenting was adopted, declaring it to be "the duty of all institutions for the education of the deaf and dumb to provide adequate means for imparting instruction in articulation and in lip-reading to such of their pupils as may be able to derive profit from exercises of this nature."

This resolution was made the basis of action in many of the older schools in this country. In this publication reference is also made to some resolutions adopted by the convention meeting in California six years ago, one of which I notice has been taken as a sort of motto by this Association, having been introduced by your honored President into his opening remarks at the meeting of last year. This resolution, which was adopted unanimously, I had the honor to present at the California meeting. I know it is familiar to you, but I will read it as I propose to make it the text of my remarks to you this morning: "*Resolved*, That earnest and persistent efforts should be made in every school for the deaf to teach every pupil to speak and read from the lips, and that such efforts should be abandoned only when it is plainly evident that the measure of success attained does not justify the necessary amount of labor." There have been many other occasions, Mr. President, one of which was the New York Convention of Articulation Teachers of the Deaf, in 1884, when I have taken pains to present the views which I have long held with regard to the oral teaching of the deaf, and my course, I do not hesitate to claim, has been consistent with these declarations. I have never wavered from them; I have always upheld them and I have rejoiced at every step that has been taken in advance in this country in the judicious oral teaching of the deaf. I wish to congratulate you, Mr. President, and all the members of this Association on the advances which are now being made and for which you are working, and to assure you that they command my hearty concurrence. [Applause.]

You will not, perhaps, allow me a place at the head of your Association, but you will certainly not leave me in the rear, for you will not be able to do this, even if you wish to, which I am sure you do not. [Applause.]

I trust the earnestness with which I have said these few words will not suggest to any one that there is any lack of cordiality and good feeling on my part towards any one connected with the work of this association. When one has, through the carelessness of others, been misrepresented, and he has been relegated to a position in which he does not belong, he may be pardoned perhaps for having some little feeling, and for seeking an opportunity to make his real attitude known.

With these remarks I shall dismiss that which has not been altogether pleasant to say, and turn to a far more agreeable subject, one which has always aroused my enthusiasm.

The question I propose to discuss this morning is:—What Constitutes Success in Oral Teaching.

The resolution adopted at California speaks of the effort that should be made with every deaf child, and which should not be abandoned until it is evident that success cannot be attained. The other terms of the resolution acknowledge the fact, which I think no one will deny, that there are those among the deaf who are not capable of attaining success in speech. We, therefore, in seeking to do what is the best possible thing for those whose interests are committed to our care, are compelled, by the very circumstances of their condition, to divide them into two classes—those who can succeed with speech and those who cannot. I remember having heard once from the lips of a very prominent oral instructor in Europe the expression of the opinion, "that every failure to teach speech to a deaf child was due either to the incompetence or the indolence of the teacher." I have always felt that to be a very unjust remark; it was very harsh upon great numbers of faithful and intelligent teachers. I remember also to have heard from an American teacher of long experience, in both the oral and the manual methods, the expression of the opinion "that nine-tenths of the teaching of articulation to the deaf was a humbug." These two expressions certainly voice extremes, and it goes without saying that the truth is to be found neither in the optimism of the European nor in the pessimism of the American. To discover the golden mean between these two extremes, to find a platform on which all may stand, with the assurance that good, and only good, will be the result of our efforts, should be the object of every member of this Association. In a letter of a prominent member of the Board of Directors of the Pennsylvania Institution—Mr. Gilpin, lately published in the *Silent World*—this fact comes plainly out that he finds in the European schools for the deaf many who are not able to succeed in speech. A few weeks ago I saw a programme giving the subjects to be discussed in a Convention of Instructors of the Deaf in Italy, in which one of the points to be considered was, "By what means should the education of children who are incapable of success in speech, be accomplished?" When such a question is raised in that country, where a revolution has taken place in favor of oral teaching within a few years, and where the claim has been made that no other method need be or ought to be used, it is evident that the lapse of time and experience have demonstrated that there are other methods than the oral which are to be considered in teaching the deaf—that not all the deaf can attain *success in speech.*

Now, Mr. President, I will ask you to let me present certain points in rather an informal way. I have observed certain things connected with the orally taught deaf which have left distinct impressions upon my mind. I will not cite many instances, but will speak of a few that have come under my notice in schools for the deaf and in society at large. I have noticed this fact in schools for the deaf, that speech which was entirely unintelligible to me was perfectly understood by the teacher of the pupils whose speech I was listening to, and surprise has been expressed by such teachers that I should be unable to understand the speech of their pupils. This experience, often repeated, suggests a conclusion of great importance, namely, that oral teachers of the deaf are not always, and in fact can hardly be expected to be, the true judges of the success of their labors. I dare say many of you have discovered this. I do not suppose I bring out a new truth, but perhaps it is one that has been overlooked in estimating the value of results. A very intelligent lady, a great reader of the Bible, told me not long ago, that when visiting an oral school for the deaf she heard a number of pupils recite Bible verses and was not able to understand a single sentence. The teacher expressed the greatest surprise that this should be so. I note another point, which has come under my observation in oral schools, that not infrequently children will say that they understand what is said to them when they do not FULLY understand. I think this point demands serious attention, for certainly when a pupil often fails to understand its teacher, or its classmates, complete success in lip-reading has not been attained. Not very long ago I fell in with a boy who had been in an oral school for five years. When I saw him he was in an institution which taught both the oral and manual methods. During the five years in the oral school he had made almost no progress in speech, though his instructors had labored hard with him. They had gone on during these five years probably hoping for final success, but when he was sent to the institution where I found him, his mental development, his advancement in study, was no more than that of pupils of one year's standing. His speech was not that of an ordinary pupil of one year's standing. It goes without saying that this boy had been most unjustly treated. He had lost four years of good school life, because the interest and enthusiasm of his teachers had detained him in a school where he did not belong. Now, I cannot undertake to say how many such cases as this exist, but I know enough of human nature to be sure that where one such case is found it is not the only one. Certainly in

the case of this boy there was no success in oral teaching and he should have long before been turned over to another method. I have met not infrequently with orally taught deaf persons whose speech was fluent, but often extremely confusing to others. These persons that I have now in my mind are of high intelligence, and thoroughly educated. With great effort and painstaking they can express themselves so as to be understood in ordinary conversation; but for some reason, perhaps through nervousness or excitement, or carelessness, they are often misunderstood and often not understood at all. I have had friends of theirs say to me that they meet them with no inconsiderable dread and even sometimes purposely avoid meeting them, because of the awkwardness of getting into conversation with them when they would fail to understand a great deal that was said and fail to make them understand, so that the interview instead of being conversation became agony. Now, I will not undertake to state all the conclusions that might properly be drawn from such instances, when the question "What constitutes success in oral teaching?" is being considered, but this deduction is inevitable, that the oral teaching which such persons have received leads to a social isolation at once lamentable and depressing. I have seen evidence of this in the homes of some of these orally taught persons. I have seen them in their own homes when conversation was going rapidly on about them, sit silent and uncommunicated with, for the reason that it was difficult to communicate with them orally and to keep up with the running conversation, and so they were left out. In marked contrast with such social isolation I have often observed deaf persons, in families where the manual alphabet was used, enjoying the whole run, the give-and-take of conversation given by the nimble fingers of some member of the family. These comparisons, Mr. President, are not made with any purpose of disparaging the oral teaching of the deaf, but only in the hope that possibly some of you may be led to a clearer vision and a more careful discrimination, than has sometimes been exercised in the past.

There has recently come under my notice a boy who was for several years in one of the oral schools of New England. He began his education in that school, remaining there four years. His mother discovered, as she told me, that he was not remarkably successful in speech; that he communicated with difficulty with those with whom he came in contact; that the advice of his teachers was that he should mingle as little as possible with the deaf, and as much as possible with the hearing; but that he found himself at such a disadvantage that he took no pleasure and gained little

benefit from his association with the hearing, and he was becoming morose, retiring and unhappy. The mother told me she wished to place her son in a school where he could have the pleasure and benefit of using signs, and so asked me to receive him into the Kendall School at Washington. He was admitted there more than a year ago; he has there been under the general instruction of the manual method with a daily half hour of teaching in speech; his mental development has been gratifying and satisfactory, and I have the assurance of the principal of the school where he was first taught, and his teacher there, coming to me through his oral teacher at Washington, that while he has been in the combined school at Washington, with speech taught as an accompaniment only, his speech and lip-reading have markedly improved. I speak of this case, Mr. President, not at all to criticise the work of the oral method, but to direct attention to the fact that there are deaf children who do not thrive and prosper under the pressure of the pure oral method, who still may attain to fair success, even in speech, under the more favorable conditions of the combined system

Paralyzed when stretched upon the Procrustean bed of pure oralism, children of this class need the more elastic and adaptable environment which the combined system affords, and under it they attain success at all points, which would never be reached under the pure oral method.

When I urge that many deaf children, having begun their education in oral schools, should after a time be transferred to schools conducted under the combined system, I would not be understood for a moment as proposing that the teaching of speech and lip-reading should be abandoned with all these deaf mutes. Such abandonment I should advocate only in extreme cases, where attainment of speech was plainly impossible. The practice that I urge with those whose success in speech is only moderate and imperfect is to take them out from under the pure oral method where speech is made the medium of communication, and in which they are so seriously handicapped by their partial failure as to make it impossible for them to attain the best results under that particular method, to take them out and place them under a method, not where speech shall be abandoned by any means, but where even their limited capacity to succeed in speech shall be developed under such conditions as shall not discourage them, but be for their good. My friend Dr. Williams, of Hartford, whom I regret cannot be at this meeting, often expresses himself very felicitously upon this subject, and I beg leave to call your

attention to a paragraph in his last annual report with which, however, I shall have to dissent in one rather important particular, but with the bulk of which I am in very hearty accord, and I believe that many here will agree with me. In speaking of the way in which deaf children ought to be treated, he says: "We hold that direct and earnest effort should be made by expert teachers of those branches, to teach speech and speech-reading to every pupil, and in no case should that effort be abandoned *until those teachers* are convinced that the pupil will never acquire enough of speech to be of any practical use."

I should dissent from his employment of the term "*until those teachers*," etc. I should not leave the decision to the teachers for the reasons which I briefly alluded to some time ago. I do not think that in all cases they are competent to judge what constitutes success with their pupils. Dr. Williams goes on to say:

"In some very unpromising cases the possibility of acquiring speech is not given up for two or three years. Here let me say that the criterion of success in speech should not be perfect naturalness of tone and inflection. It would be unreasonable to expect that, where the sense of hearing is wanting. Intelligibility is the prime requisite of good speech. Tone and inflection are secondary considerations. Any pupil who has mastered speech and lip-reading so far as to be able to carry on conversation in regard to the ordinary affairs of life in speech so plain as to be readily understood by the members of his own family, even though others fail to understand him, should be counted as a successful articulator and lip-reader. It is worth while to continue the instruction in these branches in many cases where the degree of success falls considerably short of the ability to carry on an extended conversation, provided that what of speech is acquired is easily understood. We must recognize the fact that intelligible speech is the readiest and most acceptable means of communication with people in general, but it must be intelligible. It is worth while for a child to gain even a limited amount of speech and lip-reading (the latter is as important as the former) in all cases where it can be done without serious sacrifice in mental development and acquisition of language."

I believe that Dr. Williams' opinions will be generally sustained by the members of this Association, and certainly it is an omen for good that in the school at Hartford such sound views obtain with regard to the importance of teaching speech to the deaf, and I am sure that Dr. Williams would agree with me that it should be given under the conditions which I have recited.

I come now to a point which I approach with some little reluctance, because it seems a very ungracious task to appear to dampen enthusiasm. Enthusiasm is the great moving spring of all successful human endeavor. Where there is no enthusiasm we have no worthy results, and where we find great results in this world, underlying these we find enthusiasm. But I cannot do justice to my subject if I do not touch upon this point. I want to read a paragraph from a recent report of the Pennsylvania Institution—that part of it which relates to oral teaching. It comes from the greatly-respected Principal of the oral branch of the Pennsylvania Institution, Miss McDowell :

"I believe that all who attended the convention at Lake George, last July, will remember as long as they live the few clearly understood words spoken at the close of the meeting by a graduate of the Clarke Institution.

"The relative merits of the two systems may be ably set forth, reasons for and against oral instruction may be given, but such an experience showing what, under favorable circumstances, may be accomplished must have made every teacher of the deaf, of whatever method, feel that no amount of time or labor would be too much to expend in endeavoring to give to every deaf child the opportunity to learn to speak."

Now it is possible that I may have misunderstood Miss McDowell in that paragraph, but as I read it, it seems to me to point to an over-estimate of the value of these results of speech and lip-reading of the deaf. It says that *no amount* of time or labor would be too much to expend in *endeavoring* to give these results. Surely Miss McDowell would agree with me that no time should be wasted on cases clearly unpromising and that no effort should be expended in endeavoring to attain the unattainable. Enthusiasm certainly carries men and women sometimes to very undesirable results. It is a great and good fact in human progress, but I need not tell you, as intelligent members of this Association, that history is full of the crimes of enthusiasm. Martyrs have been burned, have been thrown to wild beasts in the arena, and hundreds of wrongs have been done in the world under the spur and impetus of enthusiasm and in the name of the right and the good. Such misdirected enthusiasm should not exist among the workers for the cause of the education of the deaf. Far be it from me to wish for a moment to check any enthusiasm that may lead to useful and valuable successes. That success which is not success; that success which is only half success; those results which are only little better than failures, although they may have the benediction and the

blessing of enthusiasm, often involve the greatest wrongs, the harshest cruelty to those who are the subjects of such enthusiasm.

I trust, Mr. President, that these few words of caution in the interest of conservative action, looking to the most helpful results in oral teaching, will be accepted, as they have been offered, in the spirit of the utmost friendship for the best oral teaching—the widest successful oral teaching—in this country. I trust that I may be regarded as a friend to everything good that this Association is endeavoring to accomplish in this country to-day.

Dr. Hewson gave the third of his series of lectures. (This lecture will be found, with the others of the series, in the part of this Report devoted to "Lectuers.")

The Secretary read extracts from a forthcoming paper by Dr. J. C. Gordon, of Washington, D. C., on "Notes of Progress in the Teaching of Speech."

Afternoon Meeting.

The afternoon meeting was devoted to the School of Practice, conducted by Miss Yale, (see "School of Practice,") and to a lesson in Visible Speech by Dr. Bell (review of lessons in Report of 1892).

Professor A. Melville Bell gave a lesson in "Dialects," illustrating with readings.

FRIDAY, JULY 8.

The morning was devoted to receiving reports of the progress of the oral work in the various schools. Hon. F. B. Sanborn reported for the Clarke Institution; Dr. I. L. Peet for the New York Institution; Dr. P. G. Gillett for the Illinois Institution; Dr. J. L. Noyes for the Minnesota School; Miss A. C. Allen for the Milwaukee School; Miss Sarah Fuller for the Horace Mann School, Boston; Miss McMaster for the Western New York Institution; Miss Elizabeth Fay for the Hartford School; Miss E. L. Barton for the Portland School; Miss Virginia A. Osborn for the Cincinnati Oral School; Miss Julia R. Bateman for the Halifax Institution; Mr. A. L. E. Crouter for the Pennsylvania Institution; and the Secretary read reports from the Home School for Deaf Children, Philadelphia, the Wisconsin Institution, and the Indiana Institution.

Miss Sarah Fuller, Chairman of the Committee of Necrology, reported the death since the last summer meeting of five members:

Mr. Francis Brooks, Rev. Thomas Hill, Mr. J. I. Ashcroft, Hon. Henry Lippitt, and Mr. Thomas Hockley. Appropriate remarks were made by various members reviewing the life-work of the deceased members.

The following resolutions were offered:

By Dr. Gillett: *Resolved*, That the thanks of the members of this Association are due, and are truly and gratefully tendered to its honored and distinguished President for the untiring zeal and fidelity with which he has conducted the affairs of the Association during the past year, and particularly during the sessions of this meeting.

By Dr. Noyes: *Resolved*, That the untiring efforts of Miss Adelia C. Fay, Chairman, and the members of the committee on entertainment to provide pleasurable and profitable amusement for the members, richly merit, and they are hereby tendered, the unqualified thanks of the Association.

By Mr Spencer: *Resolved*, That the thanks of the Association be tendered the *Troy Press* for its full and accurate accounts of the proceedings of this meeting and that in connection therewith the Association recognizes the courteous and faithful services of the Associated Press reporter, Mr. J. B. Nelson.

By Mr. Booth: *Resolved*, That the thanks of the Association be tendered to the proprietors of the Crosbyside Hotel, and to Manager Jenkins and assistants for their hospitality and constant attention to the comfort of the members during this meeting.

By Miss Fuller: *Resolved*, That the thanks of this Association are due and are hereby tendered to Mr. F. W. Booth, Secretary *pro tem.*, for the energy and ability with which he has performed the duties that have devolved upon him, and that the Board be requested to make suitable recognition of his valuable services both before and during the progress of this meeting.

By Mr. Kirkhuff: *Resolved*, That the sincere and cordial thanks of the Association be tendered Miss Caroline A. Yale, for the able and instructive manner in which she has conducted the School of Practice during this meeting. And to the skillful teachers from the Clark Institution, the Horace Mann School, and the Philadelphia School for their efficient assistance.

By Miss McDowell: *Resolved*, That the thanks of this Association are due to its President and Vice-President, and other officers for their unwearied efforts in arranging for this the Second Summer Meeting of the Association, and conducting it to a successful termination.

By Mr. Thompson: *Resolved*, That the thanks of this Association are due and are hereby gratefully tendered the Volta Bureau for the handsome and valuable volume entitled the "Helen Keller Souvenir," presented to the members, and to the Hon. John Hitz, Superintendent, and Mr. A. C. Cratz, Chelsea, Mass., for their able and instructive preparation of the same.

By Mr. Hurd: *Resolved*, That the thanks of the Association be cordially tendered to Mr. Z. F. Westervelt, Miss Mary H. True, and Mr. Edmund Lyon for the very able manner in which they have edited and printed the proceedings of the First Summer Meeting.

By Miss Fuller: *Resolved*, That as an Association, we would wish to express our appreciation of Mrs. M. E. Finney's earnest desire to aid in giving speech and speech-reading to the deaf, and our indebtedness to her for the example she has furnished and for the encouragement her words have conveyed.

Each resolution was adopted by unanimous vote.

A resolution was offered by Dr. Gillett and adopted, thanking Dr. A. Hewson for his instructive and entertaining lectures delivered at this meeting

Miss Allen of Milwaukee, brought to the attention of the Association a request by Mr. Paul Binner of the Milwaukee School, that rules be formulated by which questions of a statistical nature could be answered with greater uniformity. The matter was by resolution referred to the Executive Committee.

The President then delivered his closing address, in which he congratulated the Association upon the very successful meeting now about to close, and upon the bright outlook for speech-teaching in this country, for which the Association has done and is doing so much.

There being no further business before the Association, the President announced the Second Summer Meeting adjourned *sine die*.

Lectures.

Lectures delivered by Mr. David Greene, Principal of the Institution for the Improved Instruction of Deaf-Mutes.

LECTURE I—WEDNESDAY, JUNE 29.

HOW WE BREATHE.

LADIES AND GENTLEMEN:—The first condition requisite for the production of sound and speech is a current of air passing through our vocal apparatus. This current of air is furnished by the process of breathing. In the wise economy of nature, the atmospheric air which we inhale for vital purposes is used as it passes out of our lungs, for the formation of sound and speech. "Breath is the material of speech," as Prof. A. M. Bell correctly puts it in his admirable work on "Principles of Speech and Vocal Physiology." To this statement of Prof. Bell I desire to add that breath is also the motive power of that most important part of our vocal machinery which produces voice, viz., the vocal chords. Hence without breath, speech is impossible, and without correct and normal breathing, correct and normal speech is impossible. It is, therefore, evident that in order to thoroughly understand how we speak we must go to the root of the matter, and study the mechanism of breathing.

It is said that Prof. Dalton, Lecturer on Physiology at the College of Physicians and Surgeons of New York, sometimes begins his lecture on respiration by asking his students what is the most important organ of breathing, and very seldom does he get a correct answer. The organ which is prominent above all others in the active movements that appertain to the important function of respiration is the diaphragm. Professor Dalton in his treatise on Human Physiology, says, "In the ordinary quiescent condition the diaphragm performs most of the work in the act of respiration." Professor George Von Meyer, who is also a high authority on the subject, goes so far as to state in his work on the "Organs of Speech" that, "Ordinary quiet inspiration is affected by the activity of the diaphragm alone." He evidently thinks that the part which some other organs play in this process is so unimportant that it need not be considered at all. You are aware that the

diaphragm, or midriff as it is frequently called, is a thin plate composed of muscles and fibrous tendons, and forms the partition wall separating the thoracic, or chest cavity, from the abdominal cavity. Its edges are attached to the lower circumference of the cavity of the chest. It, therefore, forms the floor of the thorax and the roof of the abdomen. The two cavities are completely separated from each other by the diaphragm, which has only a few openings that serve to transmit the œsophagus and some blood-vessels. The connection of the margins of these openings to the organs that pass through them is air-tight.

In order to understand the process of respiration, we must bear in mind the fact, which has just been mentioned, namely, that the diaphragm forms an air-tight partition between the chest and the abdomen. It is also important to note that the diaphragm has the shape of a dome with its convexity directed upwards into the thorax or chest, while into its concavity, which is directed downward, various of the abdominal organs are projected.

Before attempting to explain the action of the diaphragm I must call attention to a few facts regarding the lungs. The cavities of the lungs containing the air which we breathe are formed by numerous divisions and subdivisions of the treachea, or air-tube, which become smaller and smaller, and at last terminate in little air cells varying from $\frac{1}{70}$ to $\frac{1}{200}$ part of an inch in diameter. It is important for our purpose to bear in mind, first, that the substance of the lungs is of a light, porous, spongy texture, and above all, that it is highly elastic; second, that the entire air-passages are formed of stiff walls, so that the air always has always free access to them, the treachea, consisting of cartilagenous rings, and the bronchial tubes, even their smallest ramifications, having thin plates of cartilage scattered along their sides, so as to be always kept open; third, that the air-passages are lined throughout with exceedingly elastic fibres which extend longitudinally through the bronchial tubes, and completely surround the air-cells. The elastic tissue to which these fibres belong, may be compared best with India-rubber, because it can be considerably stretched, and when the force that stretches it ceases to act it assumes its former size and shape.

Being placed in the cavity of the chest the lungs have room to extend in all directions, when they become inflated with air and stretched to the point at which they are ready for elastic counteraction. Now we are ready to consider the action of respiration. During ordinary quiet breathing the movement of inspiration is effected by contraction of the diaphragm. When the diaphragm

contracts it becomes flatter and descends toward the abdomen, thereby enlarging the cavity of the chest from above downward. At the same time a slight movement of the ribs and the sternum enlarges the chest in every other direction. The lungs being highly elastic they expand and fill the enlarged cavity of the chest. In consequence of this expansion of the lungs the atmospheric air rushes into them through the windpipe.

In children and in the adult male, in the ordinary quiescent condition, of which I am speaking, the diaphragm performs most of the work in the act of inspiration; the movements of the abdomen are therefore especially marked, and the expansion of the chest is barely noticeable. In the adult female the movements of the chest are generally more prominent than those caused by the action of the diaphragm, and this difference in the mechanism of respiration is probably the result of the almost universal custom of tight-lacing.

To understand the process of expiration, it must be remembered that the flattening of the diaphragm besides enlarging the cavity of the chest, pushes down the abdominal viscera and presses it against the walls of the abdomen. This pressure forces the walls of the abdomen outward and they become thereby extended. Thus, the result of the contraction of the diaphragm is that after the movement of inspiration is accomplished the lungs are expanded and the walls of the abdomen are also expanded. As soon as the contraction of the diaphragm ceases it begins to ascend and assume its normal convex shape, whereby the cavity of the abdomen is enlarged and that of the chest becomes smaller. In consequence of this the atmospheric air presses the abdominal walls against the intestines and causes these to push the diaphragm upwards.

The elastic reaction of the expanded tissue of the lungs is also called into play at this moment. By this elastic force the lungs are contracted to the dimensions which they possess before the inspiration, and in contracting, a portion of the air contained in them, but not all of it, is expelled through the air-passages. The process is aided by the fact that the abdominal viscera, which have been pushed down by the descent of the diaphragm, are forced backward by the elastic reaction of the abdominal walls. And the depression of these walls is still further increased by a slight voluntary contraction of the muscles with which they are provided. There is another theory of respiration which has been advanced by some eminent physiologists to explain respiration. They say that

when the diaphragm contracts a vacuum is formed in the cavity of the chest, and that the air then rushes into the lungs which must be expanded to fill that vacuum, and thereby the air contained in the lungs becomes more rare than the outside air which rushes into the lungs, and during expiration there is a vacuum formed in the abdominal cavity. This theory does not seem as plausible as the other. Of course these are all theories as no one has ever had an opportunity of looking into the body while living and seeing these processes in operation.

It has just been mentioned that only a portion of the air contained in the lungs is expelled during the act of expiration. The reason why the lungs are never completely emptied of all the air which they contain, and never can be, is that within the lungs the bronchial tubes are circular and not flattened, and the walls of all the air-passages are stiffened throughout their entire length by a cartilaginous layer which prevents their ever being completely closed, and as they are always open the air must remain in them. Professor Kitchen, in his able treatise on the Diaphragm, says "The capacity of the adult male lungs as an air reservoir is about 300 cubic inches; in the utmost stage of collapse, meaning of course when the lungs have been removed from the chest, they still hold about fifty cubic inches of air." In the living subject the quantity of air contained in the lungs can never be reduced to such an extent, even after the most powerful respiration. According to Professor Dalton, "Only a comparatively small portion of the air in the lungs passes in and out with each respiratory movement; and it will require several successive respirations before it can be entirely changed."

The proportion existing between the air which is changed at each respiration, and the entire quantity contained in the chest varies considerably with the different conditions of the respiratory functions, but the average results obtained by different observers show that, in general, the volume of the inspired and expired air is from ten to thirteen per cent. of that contained in the whole pulmonary cavity. Thus it will require from eight to ten respirations to renovate completely the air in the lungs.

The number of respirations per minute, must, of course, correspond to the number of contractions of the diaphragm in an equal period of time. According to results obtained from the most extensive and varied observations the movements of respiration are performed on the average with a rapidity of twenty inspirations per minute. This rate varies considerably under the influence of different conditions, one of the most important of which is age. It is

well known that respiration, as a rule, is more rapid in young children than in the adult, and Quetelet, a French scientist, has found, as the average of a large number of observations,that in the newly born infant the rate is forty-four per minute, and at the age of five years twenty-six per minute, and the standard average of twenty per minute is reached between the ages of 15 and 20 years. Even in the adult a condition of rest or activity readily influences the number of respirations; as according to the same observer, they are less frequent during sleep than in the waking condition. Even a difference in position has been found to have a perceptible effect; the number of respirations being in some individuals nineteen per minute while lying down, and twenty-two per minute while standing up. Any special muscular activity, as the rapid motion of walking or running, at once increases the frequency of respiration, which returns to its ordinary regularity soon after the exertion has ceased."

Padre Marchio, an Italian teacher, thought he had discovered an important fact. He found that the number of respirations in some of his deaf pupils were as high as 26 or 28 per minute, which he considered very abnormal, and which he attributed to the fact that the lungs had not been used in speaking. The moral he wished to be drawn from this was that we must begin the work of instruction by a very extended system of breathing exercises, of which I shall say more by and by.

From the explanation which has just been given of the act of breathing, it is evident that while the movement of inspiration is an active one, accomplished by muscular contraction, that of expiration is a passive one, the result of the elastic reaction of the lungs and the pressure of the atmospheric air which force back into their natural positions the organs which have been displaced during the act of inspiration. For this reason the outgoing current of air passing through the throat and mouth during the act of expiration is best adapted and almost exclusively used for purposes of speech. Inspirations require muscular effort, and can only with difficulty be prolonged; whereas, the exhalations, as ordinarily effected call no muscles into play, and only have to be regulated to furnish a continuous current of air such as is required for the production of sound. I wish our learned friend Dr. I. L. Peet, of New York, were here to explain to us his theory that the ingoing current of air is used in the production of speech and his system of articulation teaching, which is based on this theory.

Forced Respiration.—It seems that while we are speaking in an ordinary natural tone of voice, the movements of respiration are per-

formed in a manner which is so much like normal quiet breathing for vital purposes that the difference is barely appreciable; but when we speak in a loud voice, above the ordinary tone, or when long sentences are pronounced with rapidity, a more considerable emptying of the quantity of air in the lungs must take place and the inspirations must be deeper and fuller. The alternate contraction and relaxation of the diaphragm is not sufficient to produce these results, the process therefore has to be aided by certain movements of the ribs. In order to explain how this is accomplished, the arrangements of the ribs has to be described. "The ribs are elastic arches of bone, twelve in number on each side. The first seven are connected behind with the spine, and in front with the sternum. These are called the true ribs. The remaining five are false ribs. Of these the first three are connected behind with the spine and in front with the costal cartilages. The last two are connected with the vertebræ only, being free at their anterior extremities." All the ribs articulate behind by movable joints with the vertebral column, and are so arranged that in a position of rest their convexity looks obliquely outward and downward. When the occasion for a deep and powerful inspiration arises, the ribs and the sternum are drawn upward by the contraction of the scaleni and intercostal muscles, and as each rib rotates on its articulations with the spinal column at one extremity and upon the sternum at the other, its convexity is necessarily carried outward and the cavity of the chest is expanded laterally; at the same time the movement of the sternum enlarges, to some extent, the antero-posterior diameter of the thorax, so that the latter is expanded in every direction and a stronger current of air passes into the lungs.

During a forced expiration the ribs are drawn down by the costal and abdominal muscles and they thus serve to compress the sides of the chest. In cases of excessive want of breath, as for instance after rapid running, the muscles which pass from the thorax to the upper extremities are also called into play in elevating the ribs and the collar bones and shoulders are raised at the same time.

From the description which I have given of the mechanism of breathing it may be seen that there are three methods of carrying, on the process of respiration, viz.: First, diaphragmatic breathing, which is so designated because most of the work in this act is performed by the diaphragm. It is sometimes called abdominal breathing, because it is indicated by a protrusion of the abdomen, caused by the descent of the diaphragm. Diaphragmatic or

abdominal breathing is constantly seen in children as well as in the adult male, in the ordinary quiet tranquil condition, as in peaceful sleep. Second, costal or rib breathing, sometimes called thoracic breathing, in which the ribs are brought into play and the expansion of the chest is especially marked. This mode of breathing is habitual in the female and is considered by some a characteristic mark of the female sex, by others, however, as the result of the universal fashion of tight-lacing. Third, clavicular breathing, or collar bone breathing, which is performed by raising the shoulders with the collar bones and the upper part of the chest. According to the best authorities diaphragmatic breathing during ordinary speech and the combined methods of costal breathing during loud and rapid talking constitute the right way; but clavicular breathing is totally wrong and vicious, and should not, in a state of health, be made use of under any circumstances for the production of voice.

LECTURE II—THURSDAY, JUNE 30.

HOW WE BREATHE, (CONTINUED.)

At the close of my remarks of yesterday I mentioned three different kinds of breathing, viz., diaphragmatic, costal, and clavicular breathing. I also stated that the best elocutionists have laid down the rule that diaphragmatic breathing constituted the right way, but that clavicular breathing was wrong, and should not in a state of health be made use of under any circumstances. Dr. Lennox Browne, of London, England, in his excellent work on "Voice, Sound and Speech," gives the following reasons for the correctness of this rule: "When enlarging our chests by the descent of the midriff and by sideways extension of the ribs, we inflate the lungs where they are largest and where, consequently, we can get the largest amount of air into them. When expanding our chests by raising the shoulders and collar-bones, etc., we inflate the lungs where they are smallest, and, where, consequently, we can get the smallest amount of air into them. This may easily be demonstrated by means of the spirometer, an instrument which accurately tests the breathing power of man by indicating on a little dial the exact number of cubic inches of air blown into it. I have tried that myself a good many times, and can corroborate this statement. There is still more powerful reason why midriff and rib breathing should always be

made use of, and why collar-bone breathing should never be resorted to."

"The lungs, at their bases," says Dr. Lennox Browne, "are surrounded by soft and yielding parts. We can contract and relax the midriff to the greatest possible extent and for any length of time, and that will never fatigue us, because nature has not placed any obstacle in our way. Again, we can expand and contract our lower ribs to the greatest possible extent and for any length of time without incurring any fatigue, because here, also, nature has not placed any obstacles in our way." (I pointed out on this chart yesterday that the lower or false ribs are entirely free in front, and therefore can be more easily moved than the true ribs, which are fastened in front to the sternum and behind to the spine.) "At the top of the lungs the very opposite is the case. The ribs here are not nearly so free as at the base and very much shorter. They are attached not only to the spine, as are the lower ribs, but also to the breast-bone in front. They are also greatly impeded in their movement by the shoulder-blade and collar-bones which carry the arms, and all this weight has to be lifted if inspiration be commenced in that region."

Now, I have to turn rather abruptly to another point. Inspiration as well as expiration can be effected either through the nostrils or through the mouth. Dr. Allen was kind enough to place his charts at my disposal, which are admirably adapted to our purposes.

In the case of breathing through the nostrils the soft palate rests on the back of the tongue, so that the mouth is entirely shut off. The air passes in here (indicating) through the nostrils, and from here into the pharynx, and thence into the wind-pipe.

Respiration through the mouth is only resorted to in cases of want of breath, or when a deep respiration is taken, or, again, as the result of bad habit. For a person to sit with the mouth open and breathe that way is a very disagreeable habit. In ordinary quiet respiration the mouth is generally closed and the cavity of the mouth is not employed as an air-passage. The air employed in respiration enters by the nostrils, as I have indicated a while ago, and passes through the nasal cavity into the upper part of the pharynx, then through an orifice in the anterior wall of the pharynx immediately below the cavity of the mouth into the larynx, which marks the commencement of the wind-pipe, and finally through the wind-pipe into the lungs. In passing out the air follows exactly the same track, but, of course, in an opposite direction.

The pharynx is always kept open. From the manner in which its walls are attached to the bones of the skull and the hyoid or tongue bone, as it is usually called, they are held so tense that they cannot collapse and therefore form an open cavity. Thus an uninterrupted passage is secured for the air from the nasal cavity through the pharynx into the larynx, and thence through the wind-pipe into the lungs.

In regard to mouth breathing, Dr. Lennox Browne says: "It is a pernicious and dangerous practice which frequently leads to diseases of the respiratory and vocal organs and which ought to be discouraged as much as possible."

Dr. Kitchen, of New York, in his treatise on the "Diaphragm," which I mentioned yesterday, in speaking on this subject, states the well-known fact, that if we breathe through the mouth "the air reaches the throat in too cool and dry a state, and overloaded with dust and other impurities that would otherwise be deposited on the sinuous surfaces of the nasal cavities, and on the tongue and roof of the mouth." He adds that breathing through the mouth leads not only to irritation of the throat, but "the nasal passages, missing the normal amount of stimulus from the rush of the air through them, are apt to lose tone, and the mucous membrane becomes relaxed and falls into a state of passive catarrh, and is too easily affected by inflammatory attacks."

I remarked yesterday, that without correct and normal breathing, correct and normal speech is impossible. It therefore seems right to devote a few words to the subject of incorrect and abnormal breathing, and to those disturbances of the respiratory mechanism which either destroy perfect speech or render the exercise of it impossible for the time. I cannot, of course, allude to disturbances which owe their existence to disease, but can only mention those which, as passing disturbances, of an otherwise perfect respiratory mechanism, must be referred to unusual or abnormal excitation of the nerves which govern the movements of the muscles of the respiratory apparatus.

The disturbances in question naturally fall into two divisions. In one of these divisions inspiration assumes an unusual form, and in the other expiration deviates from the common method. As disturbances of the normal form of inspiration we have the phenomena which are known as hiccough, yawning, and stammering. The altered forms of expiration which belong to our subject are sneezing, coughing, laughing and sighing. A full description of all these abnormal modes of respiration might be very interesting, but

it lies beyond the scope of this treatise. I will therefore limit myself to a short discussion of stammering, as far as it is connected with a defect in speech. This defect in speech may occur among deaf articulators. One of the present pupils of my school stammered badly when he came to us. I shall say more of him by and by.

The root of stammering lies in spasmodic contraction of the diaphragm which may last several seconds, and as long as it continues expiration is prevented. That seems to be the whole trouble with stammering. The diaphragm, as I pointed out yesterday, contracts during inspiration, and in stammerers it remains contracted, and they cannot exhale. As, however, the production of speech depends upon the expiratory current of air passing through our vocal organs, it is impossible for the person suffering from such a spasm to produce any sound until the spasm is over. This ineffectual and therefore exaggerated effort to produce sound, gives rise to distressed grimaces, and this distressed expression must necessarily be augmented by the fact that by so delaying expiration a want of breath is felt and the circulation of the blood interrupted. It is a fact worth mentioning that the congenitally deaf or those who lost their hearing in infancy, and are taught to articulate by the usual methods never fall into the fault of stammering, but this defect of utterance may be found among semi-mutes. I have mentioned already that a pupil of my school, to whom I alluded as having been a stammerer, had learned to speak before he became deaf. Dr. Albert Gutzman, First Assistant at the Municipal Deaf Mute School, Berlin, Germany, who has made the cure of stammering a specialty—I mean of hearing persons—and has published a very interesting treatise on this subject, expresses the opinion that in persons of ordinary intelligence, stammering is merely the result of bad habits. As a proof of his assertion, he cites the fact which I have mentioned, viz., that deaf children who have been taught to articulate by artificial methods never stammer. He says: "A child very easily forms faulty habits of any physical movements, and so, also, of speech. A deaf child learning to speak never stammers, because it acquires speech under the constant care of the teacher, whereas, in the case of the hearing child the development of speech goes on without any guidance whatever." Thus our poor deaf pupils have at least one advantage over hearing children. Now then, if stammering is only the result of faulty respiration, it must be clear that the only efficient way of treating it is by regulating the breathing. The patient is required to take a quiet, unhurried,

deep inspiration, chiefly performed by the diaphragm and the walls of the chest, before he attempts to speak, and to let this inspiration be followed by an expiration as slow and long as possible. That is the first rule of the treatment of stammering, to tell the patient to stop before he wants to speak and take a deep and full inspiration. This mode of treatment was employed in the case of the semi-mute pupil in my school, whom I mentioned before. The trouble has almost entirely disappeared; it only returns occasionally when he is nervously excited. I have also found it effectual to let him try to speak in as low a voice as possible. I have found that the very attempt to speak in a low tone of voice quiets the nerves, and as stammering is entirely due to nervous trouble this attempt of speaking in a low tone of voice is of great help. I let him practice before a glass so that he may see any twitching or distortion of his face and try to avoid it. Since embarrassment of any kind is apt to aggravate his troubles, I also caution the teacher to let this boy turn his face away from the class when he speaks, so that the other pupils cannot see his troubles when he has any difficulty in speaking.

I would advise every articulation teacher to study some of the publications on the nature and cure of stammering. Prof. A. Melville Bell's treatise on the cure of stammering is the best English treatise of this kind that I know of. I don't mean to disparage the others, but I have always been a close student of Prof. A. Melville Bell's works and a great admirer of his practical methods. To those who read German I would recommend the work of Albert Gutzman, teacher at the Berlin Institution for Deaf Mutes. The late Prof. Oscar Guttmann, of New York, has also written a very able treatise in German, which was translated into English and was published by Mr. Edgar S. Werner, the editor of *The Voice*. We find in all these publications a good many suggestions of which we can make practical use in teaching articulation to our deaf pupils. Besides, persons afflicted with stammering or any other defect of speech are apt to come to us for advice and assistance. I have quite a number of applications of this kind every year. People who have children who are afflicted with stammering come to me for advice. I think if some experienced articulation teacher would make it a practice to cure stammering, he could make it a source of good income in any of the large cities, because there are a good many more of such cases than you are apt to think. I am inclined to think that an experienced articulation teacher would make the most competent teacher of stammerers.

After this digression I will again return to our main subject.

The fact that the first condition of perfect and normal speech is a perfect and undisturbed action of the respiratory mechanism has long been recognized and appreciated by teachers of the deaf. Most of the manuals of articulation teaching contain directions for beginning the instruction of new pupils with breathing exercises. The late Mr. Moriz Hill, who is probably known to most of you, at least by his works, recommends that the teacher begin by breathing forcibly with his mouth open, and call the pupil's attention to the exhaled current of air, by holding the pupil's hand before the teacher's mouth and breathing hard on it. Then the pupil is required to feel his own breath on the back of his own hand. If this experiment fails, attention is to be called to the rising and falling movements of the chest during respiration. Next the child is taught to take a full, deep inspiration and exhale the air slowly in a series of slight puffs, etc.

Mr. J. S. Lachs, teacher of the Royal Deaf Mute Institution of Berlin, Germany, whose manual was published about thirty years ago and is considered one of the standard works on articulation teaching, begins by holding the pupil's hand alternately before his (the teacher's) mouth and nose to let him feel the breath. While breathing through the mouth the nose is kept shut by holding it between the fingers, and *vice versa*, so that the child may not remain in doubt as to which way the breath escapes.

The most elaborate system of breathing exercises is described in a little volume by Mr. N. Weisweiler, for many years Principal of the Deaf Mute School, at Cologne, Germany. I will give you a short abstract of it:

First.—Blowing with the mouth at light objects, such as feathers, strips of paper, a little paper wind-mill, etc.

Second.—Inhaling and exhaling, during which the teacher is beating time, viz.: Moderate breathing, deep breathing and rapid breathing, which are practised while the pupil is first sitting, then standing, and then walking. The object of this plan is to give the pupil entire control over his breathing apparatus.

Third.—Breathing through the nose while the mouth is closed.

Fourth.—Inspiration through the mouth, closing the mouth, and expiration through the nose.

Fifth.—Inspiration through the mouth, expiration through the *nose* with the mouth kept open.

Sixth.—Inspiration through the nose, with the mouth closed; expiration through the open mouth.

Seventh.—Inspiration through the mouth, holding the breath with the mouth open; then slow expiration.

Eighth.—Inhaling twice with a pause between; holding the breath; exhaling twice with pause between, etc. These exercises, although they are first preparatory only to the work of articulation teaching are to be continued daily after the pupils have learned to speak and are to be kept up for several years.

I wish to be permitted to say that I don't approve of this plan of beginning the work of articulation teaching with breathing exercises, indiscriminately with all pupils. Breathing exercises are very useful and necessary in special cases of mismanagement of the breath and consequent faulty articulation; but to say, as some do, that the respiration of every deaf child is abnornal and must be regulated before such a child can learn to speak, is, in my opinion, a great mistake.

If I may be permitted to make a harmless comparison I wish to say that this practice reminds me of Mr. Squeers' method of giving treacle to all his pupils, as Dickens describes it. Treacle may be very useful to some, but to make all take it twice a week or so, is too much. Those who advocate breathing exercises as a preliminary step to the teaching of speech to the deaf, argue that the volume of air which is ordinarily inhaled for vital wants is entirely insufficient for vocal purposes, hence the inspirations have to be not only fuller and deeper, but also more frequent. They further say that expiration during speaking also differs from the normal; for, while ordinarily, the breath passes through the air-passages in one continuous current, when we speak it has to be divided up into a series of puffs and blows, etc.

These arguments are perfectly correct, but those who advance them disregard one important fact, namely, that according to the best authorities on the subject, "the movements of respiration are in all cases involuntary in character, and even their necessary acceleration during speaking, walking or running is regulated by influences beyond our control." I quote this from Prof. Dalton's "Human Physiology."

The action of breathing is performed automatically and without any effort of volition. If when we talk, a greater volume of air has been expelled from the lungs, the laws of nature will supply the deficiency without any effort on our part, and whether we turn

our attention to the subject or not. It, therefore, seems to me that to tell a little deaf child that he must inhale an extra quantity of air, while he tries to speak, is generally as unnecessary as to tell him that he must breathe more rapidly when he is running. Yet, as I have already mentioned, when, as an exception to the rule, a pupil does mismanage his breathing, and in consequence thereof speaks incorrectly, breathing exercises should be resorted to as a remedy for the defect.

I have but very recently had a striking example of this kind among my pupils. A little girl in one of the lower classes of my school spoke in a high, shrill and disagreeable voice. None of the ordinary means of correcting this fault had any effect on her. But watching her closely one day, I noticed that while she was speaking, her right collar bone was laboriously moving up and down, as if it were performing the greater part of the work of her respiration. By calling her attention to this abnormal movement and showing her how to use diaphragmatic and costal breathing her voice improved, and finally by making her fold her arms behind her back, the motion of the collar bone was stopped entirely, and her voice was suddenly changed as if by magic. This is a very good way of deepening a high voice—making the pupil fold his arms behind his back and hold his hands firmly. That promotes diaphragmatic breathing more than anything else.

I will now mention some breathing exercises which are recommended by competent teachers of elocution and which will be found very practical and useful in the training of the voices of some of our deaf pupils who need such training. The late Prof. Oscar Guttmann, of New York, says, in his book on " Gymnastics of the Voice," " Diaphragmatic breathing is best practiced in a standing position, with the head thrown backward and the arms folded behind. Folding the arms in this way promotes diaphragmatic breathing more than any other position of the arms. . . . Clavicular breathing is best practiced if both arms are raised and the hands are folded on the back of the head. . . . This exercise will be found very useful if the pupil's voice is too deep. The best position for practicing costal breathing is to stand erect, with the arms hanging down on the sides of the body and the head slightly inclined forward."

By this exercise a weak voice may be strengthened. All these exercises which Prof. Guttmann recommends are to be used in connection with the voice. He means that the pupil should not be asked to stand up and breathe, but he should be required to

say something and say it in the right way by managing his breath properly. I think this suggestion of Prof. Guttman, to practice breathing in connection with the voice, is a very good one. Other teachers also recommend it—that breathing should be practiced in connection with speaking. It seems more natural to let the pupil say something and to show him how to manage his breath while he says it, than to have him stand up and do nothing but breathe. Another, and also a very useful exercise for strengthening a weak voice, is thus described by Dr. Lennox Browne: "Place one hand lightly on the abdomen and the other upon the lower ribs. Inhale through the nostrils slowly, deeply and evenly, without interruption or jerking." (To these qualifications of inhalation "*deeply and evenly*" might have been added, what Professor A. Meville Bell recommends and upon which he lays great stress, namely, that it be noiseless. Perfect respiration should be entirely noiseless.) "If this is done properly the abdomen will greatly increase in size and the lower ribs will expand sideways and the upper part of the chest will be pushed forward, while the collar bones remain entirely undisturbed. . . . Now hold the breath, not by shutting the glottis, but by keeping the chest expanded, and count four mentally, at the rate of sixty per minute. Then let the breath go suddenly. The student must never on any account fatigue himself with this exercise."

All this is quoted from Dr. Lennox Browne. They may, however, be frequently repeated, at intervals. The time of holding the breath may be increased at the rate of two seconds per week, until it can be held for twelve seconds, but the students should not try to go any further, as infinite harm may be done by over-doing these lung gymnastics. Exercise in moderation, regularly repeated, will increase the breathing capacity and improve the voice.

LECTURE III—FRIDAY, JULY 1.

HOW WE SPEAK.

The programme for this morning says, "9.30 A. M., 'How We Talk.'" There is a mistake in this programme. It should read, "How We Speak." My lecture has nothing to do with the talking. I have not been able to find out yet who is the author of this programme. Nobody wants to father it, and so, of course, I don't know who made the mistake. It may be that I made it myself. During our meeting in New York, last April, when this programme

was talked about, I gave Miss Yale, verbally, the titles of the papers that I was going to read. It may have been a slip of the tongue on my part, saying that I was going to read a paper on "How We Talk." Miss Yale, who is in charge of the Practice School, will deal with "talking."

The main object of the paper, which I am going to read to you this morning is, to suggest how persons who are not familiar with the mechanism of speech may study this subject without very much use of text-books. You cannot study it thoroughly without using some text-books; but my main object will be to point out how one who is not familiar with the mechanism of speech can find out something about it for himself.

I dare say there are a good many persons who are not familiar with the mechanism of speech, but probably there are not many of them present; however that is not my fault.

While the mechanism of breathing is hidden from our view, so that it cannot be seen in actual operation in the living subject, the organs of articulation and their movements are visible to the eye for the greater part. The cavity of the mouth, which is the most complicated part of our vocal apparatus, can easily be examined, and its movements observed with the naked eye, and the action of the larynx—the tone-producing portion of our vocal machinery—may be studied by means of the laryngoscope. If you wish to examine effectually the cavity of your mouth and throat as far as they are visible to the naked eye, place yourself in front of the window with your back to the light, and hold an ordinary hand-glass before you; open your mouth wide, protrude the tongue somewhat and then examine, carefully, every part of your mouth that you see in the glass. The observation through the eye may be assisted by placing the end of your forefinger on the inside of the upper front teeth, and passing it along, slowly, upward. You will reach, first, a small, hard ridge, called the alveolar processes. These are joined to the hard palate which extends backwards about as far as the two rows of teeth. When your finger gets to this boundary line, (indicated), you will find that the hard roof of the mouth suddenly changes to a soft muscular plate. This is the soft palate.

The sensitiveness of the parts will prevent you from proceeding any further with your finger; that is about as far as a person can go without irritating these parts. But, by means of the looking-glass, you can observe that the soft palate forms a curtain or veil, hanging obliquely downward and backward, with a small tongue-like appendage in the middle. This little appendage is the uvula.

From each side of the soft palate two folds or arches emerge—one going forward to the side of the tongue, and one backward. The space included between these palatine arches is called the fauces. Beyond the fauces the space at the back of the throat is called the pharynx. The two almond-shaped bodies which you find situated, one on each side of the fauces, in the triangular recess between the anterior and posterior arch of the palate, are the tonsils, which all of you no doubt know to your sorrow—as they frequently become diseased and are very troublesome. If, after this examination of the upper part of the mouth, you direct your attention to the lower portion of this cavity, you will notice, proceeding from the lips inward, first, the lower teeth, then the tongue, and by passing the end of your forefinger along the back of the tongue downward, you may feel a little elastic, rigid plate, which has the shape of the bowl of a very small spoon and rises upward, so that it almost comes in contact with the margin of the soft palate. This is called the epiglottis. Occasionally we find a person who can easily show his or her epiglottis by opening the mouth wide, protruding the tongue and making it lie flat on the floor of the mouth. I have two pupils in my school at present who can show the epiglottis in this way without difficulty. One of them, a little girl, will do it any time you ask her.

Now, we come to the larynx. I wish to repeat that I am not speaking now for the benefit of experienced teachers, who are already familar with the mechanism of speech. I am speaking for those who are not familiar with it, if there are any such persons present. You can make an external examination of the larynx by means of the sense of touch. By placing your thumb and forefinger on the so-called Adam's apple, or thyroid cartilage, which is the technical name for it, and feeling along from the middle line backward you can trace the two plates, of which this cartilage consists, for some distance. Anybody can do it on his own throat very easily and the upper edges of this cartilage can be traced back for some distance—especially on lean persons. By passing the end of your forefinger along the middle edge of the Adam's apple upwards you will reach, first, a soft yielding part and then the arch of the tongue bone, the two arms of which project backwards and can be followed with the finger for some distance, right and left. Passing the end of your forefinger along the middle line of the thyroid downward you will again reach, first, a soft place, but smaller than the one above the Adam's apple, and then you will feel a hard part, which is the anterior portion of the cricoid cartilage. It is so-called because it has the shape of a signet ring.

Placing the end of your finger on the soft part immediately above the Adam's apple and sounding any of the vowels, as *o* or *e*, for instance, you will feel a trembling motion. This motion is caused by the vibration of the vocal chords which are placed inside of the thyroid cartilage. An internal examination of the larynx may be made by means of the laryngoscope. Such an internal examination of the throat is not indispensably necessary as a preparation for articulation teaching, but it is highly interesting, and to some extent useful. So far we have been depending upon throat specialists to have our own throats or the throats of our pupils examined, but it seems to me that we might break the monopoly and take matters into our own hands. It is not so very difficult to examine your own throat, or to look way down into your windpipe, if you go to work in the right way, and I will try to explain what the right way is. The late Dr. Elsberg, of New York, says in his treatise on "The Throat and Its Functions," "Any intelligent person, with an expenditure of less than an hour's time and not much more than a dollar in money, for the purchase of a laryngoscopic mirror, may learn to inspect his own or another's larynx." The only essential apparatus needed to examine some one else's throat is this little mirror, having that long name "Laryngoscope." You see it is a little round mirror, attached to a handle, at an angle of forty-five degrees, and can be bought, I believe, for about forty cents.

To examine your own throat you need in addition a large mirror to reflect the image of this one. Place yourself in front of a window, with your back to the light, and a looking glass before you, so arranged that you can get a full view of the interior of your mouth when it is wide open. Then protrude your tongue, while you make it lie as flat as possible on the floor of the mouth, introduce the little mirror and rest its back against the uvula. Some persons raise the uvula very high and it is very easy to get this little mirror behind the uvula. But it is dangerous to do it, as you are apt to cough or choke a little when it is first introduced, and it may be caught behind the uvula so that it cannot be easily removed. I hurt my own little girl once in that way. Be very careful to rest its back against the uvula. If now you utter the sound of *a*, as in the word *hat*, you will see the image of your larynx. If you don't succeed at once, try again; generally you will have to try a good many times—probably an hour, if you are not accustomed to it, because the parts are very sensitive and the person begins to choke the moment this mirror gets in far enough.

Dr. Elsberg, whom I have been quoting, had this little instrument made, which he calls "The Educator." It is well to use this instrument first and get the parts a little accustomed to the touch of foreign bodies.

A very important point is that the little round mirror has to be warmed over a lamp or dipped in warm water before it is introduced into the mouth, otherwise it would be overcast by the moisture of the breath so that you cannot see anything inside. In reading up the history of this little instrument and of its invention, I found that a singing teacher, by the name of Garcia, invented this little mirror, but he was not able to make use of it. He had the idea; he got the mirror bent at this angle, but he could not manage it so as to see his vocal chords in operation, because every time he introduced it the surface was overcast. This difficulty was simple to overcome, but he did not know how to do it. Prof. Czermak, the Bohemian scientist, whom I mentioned yesterday, got the idea that it would be well to warm it. If you get this warmed to the temperature of your body then it will not be overcast. But be careful not to get it too hot.

To examine another person's throat, place him in front of you I would have him sit down here in front with his face to the light, and I would sit down here and have my face on a level with his, and make him protrude his tongue. It is well to keep hold of the tongue with a towel, for very likely, as soon as you touch something on the inside of his mouth with the little mirror the mouth will be closed, and the tongue will go in. If you make a person face the light in this way it is well to shade his eyes. When the mouth cannot be sufficiently illuminated by direct light, a concave mirror may be used to reflect the light into the cavity. It is this concave mirror or head mirror, I believe they call it (indicating), which the examiner fastens around his head when he examines the patient. Before I had all these appliances I used an ordinary "Bull's Eye," which answered the purpose very well. I had some one standing behind me, and with this "Bull's Eye" cast the light into the mouth of the person to be examined. The concave mirror is a little more convenient, but the other answered the same purpose. I would advise you by all means to practice upon your own throat first before you attempt to examine any other person's throat; you are more apt to be careful not to hurt yourself, and also to hurt any other person sooner than yourself.

Dr. Elsberg's pamphlet on "The Throat and its Functions," published by Mr. Edgar S. Werner, editor of *The Voice*, of New

York, will be of great service to those who wish to practice with the laryngoscope.

As I have already mentioned such practice is not absolutely necessary; any one may become a successful articulation teacher without it, but it is highly interesting to observe the action of the vocal chords while the voice is sounded. It is very interesting to watch the action of your own vocal chords, while you sound the voice in a high pitch, and again when you sound it in a low pitch.

I will also show further that it may prove very useful to the teacher to be able to examine his pupils' throats when any sudden changes in their voices take place.

I think that the laryngoscope might also be placed into the hands of some intelligent pupils. We sometimes find that the most intelligent pupils have poor voices, and if they could see the action of their vocal chords while they use their voice, I have no doubt that it would be very useful to them. I have never tried the experiment with any pupils, but I mean to try it.

Now, I will say a few words about the movements of articulation, assuming again that I am speaking to imaginary persons who don't know anything about the movements of articulation. If you study the movements of your mouth while speaking before a glass, the first thing that may strike you as being most conspicuous is that of the two jaws—the upper is rigid, being immovably connected with the rest of the skull. Therefore, when any change in the position of the jaws takes place during the act of speaking it is always the lower jaw which moves but not the upper. The angle between the two jaws is largest during the pronunciation of the broad Italian *ah* as in *father*, and it is smallest during the articulation of the long sound of the vowel *e* as in *be* or *he*. During the formation of most of the sounds of speech the movements of the jaws are so slight as to be hardly perceptible, and generally the movements of articulation are performed by the soft parts of the mouth, viz., the lips, the tongue and the soft palate.

The movements of the lips are two-fold, viz.: first, passive, and second, active movements. Passive movements of the lips are those which are the incidental result of the depression and elevation of the lower jaw, as for instance, in the sounds of *a* in *far*; *a* in *ask*; *a* short, in *at*; *e* short, as in *end*.

Of active movements of the lips we may again distinguish four different kinds. *First*, spreading of the lips, as for instance, in long *e*. *Second*, rounding of the lips, as, for example, in the pronunciation of long *o*, or of *a*, in *all*, or in *oo* in *mood*. In the

pronunciation of all these sounds the lips have to be rounded to a greater or less degree. *Third*, another active movement of the lips is that in which they are protruded—such protrusion may be noticed when the sound of *sh* is given, but it is not always necessary to use it in *sh;* we can give a very good *sh*, without protruding the lips; or in the sound of *w*, as in the words *water* and *wood*. When the lips are protruded they are of course rounded at the same time. *Fourth*, a movement in which the lips are pressed against each other and then opened rapidly as in the sounds of *p* and *b*. It may also be observed that in some articulations the lower lip alone moves independently of the upper, as in *f* and *v*, in which the lower lip is brought in contact with the upper teeth.

Beginners or students of articulation teaching are apt to involuntarily concentrate all their attention upon the action of the tongue or the throat and to overlook the movements of the lips entirely. I have had that experience with new teachers. They should take care not to fall into that error, as the lips play an important part in the articulation of the sounds of speech, and especially in the formation of the vowel sounds.

I will now consider the movements of the tongue.

This organ is capable of performing a great variety of movements. To examine systematically the principal ones of these movements which are employed in the articulation of the sounds of speech, it is well to observe, first, those movements which are made by the forepart of the tongue; second, those of the middle part; and third, those of the back part of the tongue. You may observe that the forepart of the tongue is brought into complete contact with the palate in the formation of the sounds of *t*, *d* and *l*. It is applied to the palate in such a manner as to leave openings on both sides in *l*—the front edge of the tongue is brought in contact with the roof of the mouth, and held there, and the sides of the tongue vibrate. The tongue is presented to the upper gum in such a manner as to leave a small central opening for the emission of the breath when the sounds of *s* or *z* are pronounced; it is turned upward, so as to assume the shape of the bowl of a spoon, in the pronunciation of the sound of initial *r* as in *room* or *robe*, etc.; it assumes the same position, but is turned further inward in the sound of *sh*, also in that of *zh* as in the word *pleasure*.

A close examination of the movements of the middle part of the tongue will show that this portion is never brought into complete contact with the palate in the pronunciation of any of the

sounds that occur in the English language. (To Dr. Bell, Sr.) Am I correct in that?

DR. BELL, SR.: Perfectly.

MR. GREENE: I don't know of any English sound in which the middle part of the tongue is brought into complete contact with the rest of the mouth. The idea generally prevails among laymen and also among physicians that if a child is tongue-tied it cannot learn to speak. I had a pupil once who was tongue-tied in the very worst way, but he became a very good articulator in spite of it. We didn't try to have any operation performed on him. I cannot think of any sound of the English language which a person who is tongue-tied cannot give correctly with the exception of the *l*. The *l* of that boy always was a little deficient. In Germany or in Ireland it would make a great difference, because a person who is tongue-tied could not pronounce the rolling *r*.

I mentioned that the middle part of the tongue is not brought in contact with the roof of the mouth, but it is raised and approximated to the roof of the mouth, so that an open place is left for the breath to pass out in the formation of the sounds of short *e*, in *edge*, short *i*, as in *ill*, long *e*, as in *eel*; and in the consonant sound of *y*, as in *yard*, *yes*, *year*.

The only movement of the back part of the tongue seems to be that in which it is brought into complete contact with the palate, as in the sounds of *k*, *g* hard, and *ng*.

The next thing that I wish to speak about is the soft palate.

This organ, being placed far back in the mouth, its movements are not open to our view and cannot be studied from direct observation. So these imaginary persons to whom I am speaking now, who want to make a little home-study of the anatomy of the mouth, will have to consult some text-book on this, as no one can observe the actions of his own soft palate during speech. The movements of the soft palate have been ascertained through a series of very interesting experiments, about which I hope to be able to speak to you before I leave the subject.

All writers on the subject agree that the soft palate plays a most important part in the functions of speech. During the utterance of the various sounds of speech the breath or voice, as the case may be, has sometimes to be emitted through the mouth and sometimes through the nose. During the formation of all pure oral sounds, whether vowels or consonants, the nasal cavity has to be entirely shut off from the expiratory current of air, so that the latter can pass out through the mouth only, whereas, in the pronunciation

of what are called nasal sounds, the mouth has to be closed, and the current of air has to pass through the nasal cavity. This closing and opening of the cavities of the mouth and nose is accomplished by the movements of the soft palate. When the soft palate is raised and brought into contact with the back part of the pharynx, it shuts off the breath or voice from the nose (indicating). But, as you all know, the voice may be shut out from the mouth not only by the soft palate but also by the tongue; for instance, in the sound of *n*, the edges of the tongue have to be brought into contact with the roof of the mouth, and the contact has to be made so complete that no breath or voice can pass out through the mouth.

LECTURE IV.--SATURDAY, JULY 2.

HOW WE TEACH DEAF CHILDREN TO SPEAK.

Before I begin reading my paper this morning I would like to give expression to a thought which has been in my mind for some time, and to call your attention to a fact which has struck me most forcibly and most painfully since I have been here.

We have among us in this hotel a goodly number of bright and intelligent semi-mutes, some of whom have lost their hearing at the age of five, six, eight and ten years, and I have no doubt that at the time they entered school their speech was perfectly natural; but to-day among all these intelligent, bright semi-mutes, I have not found one who speaks in as natural tone of voice to-day as she or he probably spoke on leaving school. Now this is very sad to me. I have met with the same experience among my own pupils. I have found that in congenitally deaf pupils, when I meet them eight or ten years after they have left my school, their articulation has improved in a great many cases. I have seen a good many of my former pupils who spoke better five or ten years after they left than they did immediately after leaving the school; but in the case of semi-mutes I have invariably found that their voices deteriorate; their speech deteriorates and becomes less distinct. I cannot remember a single case of a semi-mute among my large acquaintance whose voice remains natural. Now this is very sad The question is, What can we do to prevent this?

The first thing to do, it seems to me, is to inquire into the cause. Now, I think that a congenitally deaf person, who is taught articulation by artificial means, has the muscular sense of his vocal

organs developed to a great extent, and that guides him in his utterance. If he speaks to people and finds that they cannot understand him, he will try to speak the same words over again, and he knows how to exercise care and what to do to speak more plainly as his muscular sense tells him; but in the case of semi-mutes they don't have this muscular sense of their organs developed—they speak when they come to us. We don't have to teach them to speak. Their organs of speech run along in well-worn grooves, if I may use that expression. They move along as they have been moving for some time; but in the course of years these well-worn ruts become less distinct, and the organs don't move any more as they used to. These unfortunate persons have nothing to guide them in their utterance, because we find that a great many of them lose all memory of sound. I have known some bright and intelligent persons who lost their hearing at the age of eight or ten years, and when I asked them a few years afterward whether they could remember the voices of their parents, they would say "No." They had forgotten the voices. They have no memory of sound left, and they have nothing to guide them. This seems to me, then, a subject for consideration; we should take steps to develop the muscular sense of the vocal organs in semi-mutes; we might to some extent, I think, help to retain the natural tone of their voices.

I have tried within the last year or two to give semi-mutes a thorough course in vocal physiology, with a special view of developing this muscular sense. I take up, for instance, the sound of the letter *n*, and would ask, "What do you do when you sound the *n*? Do you do anything with your tongue? Do you send the voice through the mouth or the nose?" etc.

They are not able to answer these question at first, but they get their attention directed to the subject, and I hope in the course of time the muscular sense of their vocal organs will be developed. I have not tried this experiment long enough to be able to speak of results, but hope it will have the desired effect. If agreeable to you, Mr. Chairman, I would like to hear what experience others have had in this matter.

MR. HUBBARD: Don't all speak at once, please, with your experience. I suppose, perhaps, I might call upon the oldest young lady here to speak, but I will not do that, but would ask Miss Yale to give us her experience.

MISS YALE: I don't know that I have thought of it just the way Mr. Greene has. I am confident, however, that in the majority of cases the speech of a congenital mute improved after leaving

school, but I should not quite agree with him in regard to semi-mutes. I think that the improvement is not so great in them in the majority of cases, but I think the loss is less than Mr. Greene has put it.

MR. GREENE: Do you know any semi-mute of twenty-five or thirty years of age who speaks in as natural a tone of voice as he spoke at the age of seven, when he lost his hearing?

MISS YALE: Yes, I know quite a number.

MR. GREENE: Then you are more fortunate than I am.

MR. ELMENDORF: I have met mutes in all conditions and countries—German, French and Italian—and I never yet have heard a deaf mute or any person who was partially deaf, speak in an absolutely natural voice; I hold it is impossible. My experience has been very peculiar. I have heard a great many deaf pupils speak who were from deaf institutions from all over the world, and I have never heard one speak naturally. I think it is impossible to make deaf people speak naturally—I mean to speak as hearing people do. There are deaf mutes who speak very well, indeed, but as for speaking naturally as they did before they became deaf, I hold that it is impossible.

MR. GREENE: I didn't speak about miracles. My main point was this: congenital mutes are apt to improve in speech after they leave school; semi-mutes never improve in that regard, so far as my experience goes. If I meet one of my former pupils—a congenital mute—about ten years after he has left school, I often find that his articulation has been improved, but invariably, the articulation of one who lost his hearing at nine or ten years of age, has become less distinct.

MISS FULLER: As to the first part of the question, whether they can speak naturally or not, I think we are not prepared to answer that; we have not yet done all that can be done for them. I think we have hardly begun to know what is possible, and it seems to me a great deal more time and study and thought ought to be given to the matter. However, I know that it has occupied our attention a great deal during the last three or four years. There are some who speak almost as naturally as persons who hear. I think, however, that habits have been acquired which are hard to overcome—acquired through long years of dullness of hearing, which has not been corrected, and therefore becomes thoroughly fixed. I think the semi-mute usually has a more natural voice than a child who has had speech. However, there are some cases in which congenital deaf children have more natural voice.

MR. GREENE: It has been my experience that semi-mutes, who speak perfectly natural when they come to us, have lost this natural tone of voice ten or fifteen years or so after they have left school—their voices deteriorate after they have left school. In the case of congenital mutes I have often found that the voice has improved. The congenital mute will often speak more plainly five or ten years after he has left school than at the time when he left us, whereas the semi-mute invariably does not speak so well ten years after he has left the school as at the time when he left. Miss Fuller, have you had the same experience?

MISS FULLER: In the case of a boy who lost his hearing at the age of seven, who was in delicate health and had attacks of what seemed to be epilepsy—often being seized in the school-room with these attacks, this delicate condition of health may have had something to do with his speech being very imperfect for two or three years and continued to be so. Then there was a very decided improvement and he is now in a school, and has been during the last year in a private school for hearing children, and his speech has greatly improved. He is allowed to take the exercises in declamation and they find that his tones are better.

MR. HUBBARD: Miss Yale, will you please give us something of your experience at your school thirty years ago—or twenty years ago, and tell us in regard to the speech of the pupils.

MISS YALE: Do you mean the speech of our pupils of twenty years ago—whether it has improved? I think it has; I should be sorry to think that there was no improvement.

MR. HUBBARD: Why is it; do you teach them better?

MISS YALE: I hope, that, personally, I teach better than I did twenty years ago. It seems to me that twenty years of experience ought to have done something for a school, and think it has for ours. The question which Mr. Greene raises, I think, is this, whether a semi-mute improves in speech after leaving school. I never heard a child who had been deaf for several years speak with perfect naturalness. I think almost immediately after hearing is lost, speech fails somewhat, but when you compare semi-mutes who have been out of school from the time they leave school, I am certain that in some cases speech is certainly not deteriorated, but it is better.

DR. GILLETT: My observation is variable. I think that that is very much due to the associations they enter into after they leave the institution; in some who go into families where special care is taken, an improvement is made and their speech does not

materially deteriorate; others, whose families don't give as close attention, when they return to us, we find later on, if they don't come back soon, do not maintain the excellence of speech they had. I never had the good fortune that Mr. Greene has had, of turning out persons who had lost hearing quite early in life or who were naturally deaf, and had perfect speech. My pupils have almost always more or less imperfections of speech. I suppose if they could get their hearing they would speak perfectly in time. None have done that yet.

MR. GREENE: I wish to speak to you this morning about some experiments by which the character of the action of the soft palate has been ascertained. You are aware that the movements of the soft palate are not visible to the eye while we are speaking, and, judging from my own experience, it is not possible to decide from the muscular sense of the soft palate what it is doing while we speak. I have now had a good many years' time to train and develop the muscular sense of my vocal organs, but, no matter how much I try, I cannot tell whether the soft palate is moved back during the pronunciation of the sound of *n*, for instance, or not. I have no muscular sense of the soft palate, and I have inquired of others and have not been able to find any one who has. The question is, How do we know what the soft palate is doing? This has been ascertained through a series of very interesting experiments which I will describe to you, because I think they are useful and suggest a way for correcting some grave faults in the utterance of some of our pupils. The action of the soft palate was, after much controversy, clearly proved by the Austrian scientist, Johann Czermak. A thin wire was bent twice at right angles in the same plane (indicating). To one end a small ball of wax was attached. This represents the wire bent twice at a right angle in the same plane, with a little ball of wax at one end (indicating). The wire was then pushed through the nose until the wax ball lay upon the posterior surface of the palate. He inserted the wire here (indicating) and pushed it back until the little ball of wax lay here on the soft palate (indicating). The other end of the wire hung as an indicator before the mouth. The vowels (he used the German vowels) were then uttered in the following order: a (ah), e (*a*t), o (*o*n), u p*oo*r), i (s*ee*). The indicator rose very slightly for "ah," but more for each of the other vowels, successively, attaining the greatest elevation with "i (ee)." The order of the vowels was then reversed, and the indicator gradually sank till when "ah" was no longer audible, it resumed its former vertical position. This

experiment proved that the greatest elevation of the soft palate occurs in the vowel " ee," and that the elevation gradually diminishes when the vowels are uttered in the succession of i, u, o, e, a (German), and *vice versa*, the least elevation of the soft palate takes place in uttering the vowel " ah." These same tests with the wire probe applied to consonants proved that the greatest elevation of the soft palate takes place in the voiceless consonants, whereas in the voiced consonants the elevation was less, probably because in the pronunciation of these sounds there is no need of guarding the entrance to the nasal cavity. In the nasal sounds, *m*, *n*, and *ng*, the wire indicated that the soft palate was not raised at all, which result was, of course, to be expected, as in the pronunciation of these sounds the breath has to pass out through the nose, and if the soft palate were raised, it could not pass out that way. Prof. Czermak further demonstrated in several ways that not only the degree of elevation of the soft palate varies in the different vowels, being placed higher up in " ee," and lower down in " ah," but the degree of tension or the amount of pressure against the wall of the pharynx is also increased or diminished in the same proportion as its elevation is greater or less. He found that in the sound of " ee," in which the greatest elevation of the soft palate takes place, the pressure of this organ against the back of the pharynx is also greater than in any other of the vowels. He mentions the following experiment which he performed on himself: Lying down on his back he had some water injected through a catheter into the back part of his nasal cavity while uttering the vowel " ee," and found that the water remained there and did not flow down into the lower part of the pharynx. Some one looking into his mouth could see no water running down his pharynx.

This was also the case when the vowels *u* (*oo*), *o* (*on*) and *e* (*at*) were uttered, the water only entering the pharynx at once when he was seen to pronounce the vowel *ah*. The tension of the soft palate had therefore been sufficient to support the superincumbent water till the vowel *ah* was uttered. Passavant repeated the same experiment, using milk instead of water, the advantage being that the milk could be more easily seen when escaping into the pharynx. The result of Passavant's experiment was the same as Czermak's. He resorted to another method to discover whether the escape during the pronunciation of *ah* was due to imperfect closure or from the weight of the fluid forcing open a closure which otherwise would have remained perfect. A wire of the thickness of a strong thread was bent twice at right angles in the same plane and

introduced into the nose until one end could be seen through the open mouth hanging down below the free margin of the soft palate, the other end projecting from the nose. Upon moving the outside end the part of the wire hanging down in the pharynx could be distinctly seen to move slightly from side to side. While, however, the vowel *ah* was being pronounced it was no longer impossible to produce this motion, which shows that the contact between the soft palate and the posterior walls of the pharynx is so perfect while the vowel *ah* is uttered that a wire of the thickness of a thread will be held fast. That is positive proof that in the correct pronunciation of *ah* the contact is perfect. The conclusion to be drawn from all this is, that during the production of all pure oral sounds, whether vowels or consonants, the soft palate closes completely the nasal passage, so that the expiratory current of air can only pass through the mouth and not though the nose.

The experiments which I have described are unpleasant and fatiguing for any one to try on himself. Prof. Czermak, however, mentions another experiment which is simple and which no one will hesitate to perform on himself. This experiment is also of considerable practical value to us in the work of articulation teaching. To find out whether in the production of any sound the breath is emitted through the nose or not, he holds a small hand-mirror or any polished surface horizontally under the nostrils and observes whether any moisture forms on it or not. The least trace of a breath of air will at once be noticeable by precipitation of water vapor on the cold glass. In regard to sensitiveness and convenience for use, this test leaves nothing to be desired. By means of it any one can convince himself that during the correct pronunciation of the pure vowels no breath passes through the nose, and that therefore the contact of the soft palate with the pharynx, as well as the resulting closure, is complete. To make the test properly, the sound of the vowel should be prolonged somewhat and the mirror placed under the nose after the sound has commenced and removed again before the voice has stopped, otherwise the breath from the nostrils will be deposited on the polished surface after the sound has been finished. The mirror is more sensitive than the ear. Some people through carelessness or bad habit permit some breath to escape through the nasal passage while speaking, which the mirror will reveal at once; although the sound of the voice may not be sufficiently nasal to be detected by the ear. I have dwelt at such length on this subject, because it is of the utmost importance to us in our school-work, and because without a

thorough understanding of it, it will be impossible for us to correct a nasal tone of the voice. There is not the least doubt that this fault of utterance is always caused by insufficient contact between the soft palate and the posterior part of the pharynx. In our pupils this imperfect closure is sometimes due to swollen tonsils or to weakness of the muscles of the soft palate. In either case, we have to consult a physician. You cannot train the voice where there is a diseased condition of the organs. There may also be an elongation of the uvula or a malformation of the parts. It is well for us to examine the mouths and throats of our pupils at intervals, particularly if any change in their voices is noticed. Cases of enlargement of the tonsils and inflammation of the mucous lining of the pharynx are often found. These conditions are frequent in our school in New York where the climate is particularly trying to the throat, but probably the great strain upon that organ incident to artificially acquired speech is apt to aggravate its susceptiveness of disease. I would like very much to hear what experience others have had with reference to the aggravation of throat troubles caused by the training necessary for the study of artificial speech and also what effect it has upon the lungs of pupils.

Among the various causes of nasality of the voice, I mentioned weakness of the muscles of the soft palate. I am inclined to think that many of our beginners in articulation let the voice escape through the nose because the muscles of their soft palates are insufficiently developed from want of use. In ordinary breathing the soft palate rests on the back of the tongue, closing up the mouth passage and permitting the air to pass in and out through the cavities of the nose. It is only in speaking that the soft palate has to be raised. Now since our pupils have not been accustomed to speaking, before they came to us, they have not had occasion to make much use of the muscles which are employed in raising the soft palate, hence these muscles have remained weak; and it is only after considerable practice that they acquire the requisite strength to perform their function.

There are several methods by which the defect of nasality of the voice may be remedied, provided that this defect is the result of habit only, but not of a diseased state or of malformation of the organs of speech. A very excellent method of this kind is recommended by Prof. A. Melville Bell. He says: "Let the student place himself before a glass—his back to the light—and, opening his mouth, inhale breath deeply, but noiselessly. If he do not, in this process, elevate the soft palate, and depress the tongue so as to

form a visible arch of considerable height and breadth, he will be the better of practice for that purpose. Let him retain the soft palate at the elevation he obtains, as long as possible, dwelling on the open vowels *ah* and *aw*, without allowing it to fall. He will distinctly *see* the position of this organ in sounding these vowels, and he may be able, by sensation and partial observation, to maintain it in the same position in sounding the closer vowels *e*, *eh*, *oh*, *oo*, etc. In this way a nasal tone will be purified, and that most disagreeable blemish of speech removed." I wish to call your special attention to Prof. Bell's selection of the open vowels *ah* and *aw* for the exercise in purifying a nasal voice. We all know that the fault of the speaking in a nasal tone may show itself in the pronunciation of any of the sounds of the alphabet—vowels as well as consonants—but if it exists at all, it is more marked in the close vowels of *ee* and short *i* than in any other sound. The reason for this is that in these close vowels, the back of the tongue has to be raised and brought into close proximity to the roof of the mouth, which movement is apt to deflect the current of air from the mouth and to send it out through the nose. Another reason probably is that, as Prof. Czermak has demonstrated through his experiments, the pressure of the soft palate against the wall of the pharynx has to be greater in the vowel *ee* than in any other vowel-sound; and in the pronunciation of the open vowels *ah* and *aw*, a considerable portion of the breath may escape through the nose without appreciably marring these sounds. Now, since it is one of the best rules in teaching, to make the first steps easy, it is advisable to select the open vowels for practice in our attempts at purifying a nasal tone.

Prof. A. Melville Bell's method is undoubtedly the best and the surest. It should therefore be applied with all pupils who are old enough and intelligent enough to comprehend it. But it is best adapted for older pupils. At the age at which our pupils come to us, very few of them are mature enough to comprehend what is required of them in this experiment. It therefore seems preferable in the case of our little beginners in articulation to make use of the hand-glass in the way suggested by Prof. Czermak. I have never found a pupil who did not at once understand what was wanted of him, when he was shown that the breath escaping through his nostrils causes two corresponding spots of moisture to appear on the hand-glass held under his nose. In trying this experiment it is best to let the pupil face the light, because he will then better be able to see the spots of moisture on the glass.

I shall have to skip part of the paper which I have prepared, as my time will not permit me to remain with you long enough to read the whole of it. The subject which I do not want to omit and upon which I wish to touch next is consonant combinations.

I dare say every articulation teacher agrees with Mr. Henry Sweet, the English writer on phonetics, when he says that the ideal language would be one in which each consonant was separated from the next by a vowel. Unfortunately the English language is far from being an ideal in this regard, for accumulations of two or three consonants in one syllable are quite usual, as for instance, in the words blue, snow, asks, world, etc. I do not know of any writer on the subject of phonetics who has attempted to properly classify the vast number of consonant combinations that occur in the English language, yet it seems to me that such classification is possible. I would divide these combinations into three classes.

In the first class belong those combinations whose elements are formed at the same spot in the vocal tract, as is the case when a consonant is doubled, as in *hammer*, *cannon*, *better*, *acquire*, etc.

The second class comprises those combinations which are made up of sounds that are formed at points contiguous to each other, as in *bl*, in which the first sound is formed by the lips and the second by the front part of the tongue—or *sl* in which the point of the tongue is held at places that are near to each other.

In the combinations of the third class, the elements are formed at points that are distant from each other, as *sk*, *skw* (square), etc.

The combinations of the first class are the easiest to pronounce; those of the second are more difficult; and, those of the third are the most difficult to utter. It seems that the following rules may be laid down for the correct pronunciation of all these three classes of consonant combinations:

Rule I. If possible, the position for the first element has to be held till the second element is finished—or, in other words, the movement which is common to both elements must be performed once only. Take the word *hammer*, for instance. To tell the pupil that the *m* has to be sounded once only is wrong, because he will then say *ham-er*. To tell him to sound *m* twice is also wrong, because he will be apt to pause between the two *m's* and the result will be *ham-mer*. The correct way is to keep the lips closed after the first *m* is finished and with the lips in this position the second *m* has to be sounded. In a similar manner the front edge of the tongue has to be *held* at the roof of the mouth in pronouncing the double *n* in cannon, banner, etc. We often find that a pupil

will allow his tongue to drop into its natural position after the first *n* is completed and then raise it again for the second sound, which is wrong, because in order to pronounce the combination correctly, the raising of the tongue being the movement which is common to both elements of the combination, has to be performed once only. Rule I is also applied in *mp*, *nd*, *nt*, *dl*, etc.

Rule II. If Rule I cannot be applied, then the position for the second element has to be anticipated and must be assumed either while the first element is pronounced or before the first element is commenced. In *bl*, for instance, the tongue has to be placed into the position for *l*, while the lips are closed for the *b* sound, so also in *sl*, *pr*, etc. If the tongue is left in its natural position on the floor of the mouth until the *b* is finished and is then raised for the succeeding sound, the result will be *b*^{a} *lu*, *b*^{a} *room*, etc.—an error which is quite common among deaf articulators. In the combination *ch t sh*, in which it is not possible to place the tongue into the position for *sh* before the *t* is completed, the first element has to be formed higher up, so that when the tongue becomes disengaged from the roof of the mouth after finishing the *t*, it is already in the position necessary for *sh*. The same process takes place in the combinations *dr*, *tr*, etc. (Lecture unfinished on account of departure of lecturer.)

Lectures delivered by Dr. Harrison Allen, of the Biological Department of the University of Pennsylvania.

LECTURE I—THURSDAY, JUNE 30.

ERRORS IN THE MUSCLES OF THE PARTS USED IN SPEECH.

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE ASSOCIATION: As I stand here this morning I am reminded of the young lawyer, who in the course of a trial intended delivering an address to the jury when he was interrupted by the judge to the effect that the address was unnecessary since he, the judge, was prepared to charge the jury without it. The young man then said: "At least, your honor, you will allow me the privilege of concluding by making a few preliminary remarks." If I could so conclude it would be doubtless the best thing for me. I assure you that the material I have brought with me is not the kind I would have selected had I known, as I now do, of the spirit actuating your association. Since I have listened to the proceedings of yesterday, since I have conversed with the principals of your institutions, and more particularly since I have glanced at the report of the proceedings of your body of the last year, I would be greatly pleased if I could return home and prepare other addresses. In a word, I have recast many of my impressions. Instead of following the order announced on the programme I will call your attention in this my first lecture to SOME OF THE DEFECTIVE CONDITIONS OF THE VOCAL ORGANS STUDIED IN CONNECTION WITH QUESTIONS OF THE ORAL METHOD OF TRAINING THE DEAF.

The study of the organs of speech is pursued by the articulation-teacher and the physician in methods which are practically the same. Both are walking on parallel paths on different sides of the same hedge. Are they not in need of each other? The articulation-teacher is surely needed by the physician. Habits in children often persist after the causes for them are removed. Thus a patient upon whom a cleft palate has been closed is apt to talk almost as badly as though nothing had been attempted for his relief. A nasal quality to the voice may remain after a chronic disease of the nose and throat which originated it is cured.

Let me assume that a growth, the so-called third tonsil, or adenoid growth, is present in the naso-pharynx, by which term is meant the space back of the nasal chambers and above the soft palate. The voice in a subject so characterized is of a peculiar quality. Writers denominate it the "dead voice." It is interesting to know that Dickens in "Oliver Twist" gives the "dead voice" to Barney, one of the thieves in Fagin's den. Now take away the third tonsil from Barney and he still will be apt to talk with the "dead voice."

When we recall the fact that in such children the organs of speech have been trained from the beginnings of articulation on an imperfect model, and that every muscle fibre, even if it retains its normal tonicity, which it is not always sure to do, is falsely adjusted to every other, the cause for these bad habits is not difficult to ascertain, and the training must be conducted as systematically by the methods of the articulation teacher as though the pupils were deaf. Unfortunately teachers are not always easy to obtain. They are fully occupied with specific duties. I have no doubt that in time, our large cities will have thoroughly equipped persons to take care of these cases. Trainers of the singing voice are indeed prepared to undertake the work. In one instance, which I now recall a teacher of articulation in Paris, who was engaged in training vocalists, secured excellent results in a patient of my own, after some care had been given at the hands of an articulation-teacher for the deaf in this country.

In no less degree should the articulation-teacher rely upon medical science. Not that the teacher should understand medicine as a physician understands it, but that the signs which tell when medical care is necessary should be known. You tell me that medical men are already engaged in all appropriate work in your institutions. I may be wrong, but I believe physicians are engaged to look after the general health of the pupils rather than to fix any relations existing between teacher and pupil. False relations are often present I believe between teacher and pupil because of the difficulties which are in themselves medical. Let me illustrate my meaning by reverting to the subject of the third tonsil. Besides giving the intonation to the voice already mentioned it tends to prevent air from reaching the wind-pipe by way of the nose. It is apt to create a nasal discharge, and, from the fact that the phlegm or mucus is disposed to fall from the upper to the lower parts of the throat, all the vocal organs are kept in a state of excitement. We have two evils here to contend with, first, the evil of mouth-

breathing, and second, the evil of intractable vocal organs. The pupil is placed at a disadvantage from the general effects of the first, and of the mechanical conditions resulting from the second.

The habit of mouth-breathing interferes with normal diaphragmatic breathing—the lower part of the chest does not expand, the lower ribs do not move perfectly, as a result the labor is thrown on the upper part of the chest, or remains in too great a degree abdominal. The signs which we rely on to detect this condition are the following: The lower ribs, namely, the last seven, are directed in a marked degree obliquely downward at the side of the chest, and lie so near each other that the depressions at the intercostal spaces are practically obliterated. The lower end of the breast bone is very narrow and more or less grooved longitudinally, and at the lower half of the chest, where the ribs and cartilages meet, there is marked on each side shallow saucer-shaped depressions. Higher up at the level of the second rib the breast bone shows a ridge extending directly from side to side. This ridge answers to the line of union between the two of the three main divisions of the breast bone, namely, the handle (manubrium) and the blade (gladiolus) of the Roman sword-like figure. The chest does not expand normally in any direction, for while the upper ribs exhibit intercostal spaces which are too wide, the shoulder-blades have projecting tips ("angel wings") indicating that these bones, growing as they do at a normal rate, appear too large when compared with the stunted chest.

You have mentioned, Mr. President, in your paper in your first report* the importance of gymnastic training of the throat muscles. You spoke particularly of the peacock-sound, the result of too close adaptation of the posterior half arches (palato-pharyngeal folds) and the importance of instructing the pupil to learn to release the tension on these folds and place them measurably under the control of the will. But, sir, in many clinical conditions, and chief among these I place an unrelieved distress caused by the presence of an overgrown third tonsil, I find these folds in the position you describe. They are persistently adducted, teased, and intractable. I venture to state that when a pupil exhibits intractableness in overcoming the peacock voice that a laryngologist should be requested to make a careful examination, for in my judgment it is probable that a faulty method of breathing, neglected catarrh, or both, with a growth in the upper throat passage would be found

*Proc. Am. Ass'n to Promote the Teaching of Speech to the Deaf, 1892, 135.

to be cause. When the treatment is completed, then renew the appropriate gymnastic exercise.

The connection between congested states of the nose and naso-pharynx, especially when associated with mouth-breathing, and mental condition is of first importance. No child who does not breathe through the nose can be said to have a normal brain. The power of attention, the tenacity of the memory, the control of the emotions are all weakened. The disposition is apt to be sullen, occasionally intractable and in rare instances the child appears actually to be mentally defective. The hearing is often impaired, and this taken with the other states, takes the pupil at a great disadvantage with other children. With children entirely deaf you can understand better than I how serious are the obstacles which stand in the way of the pupil becoming trained to speak, and how severe the tax on your own resources of tact and industry in endeavoring to secure any good result from such unpromising material. But I would speak twice for the child and once for you. Can one conceive of a more pitiable situation than to have in addition to absolute deafness, these superimposed distresses, all of which must add up to the sum of unhappiness? How many children are held as stupid, inattentive, if not imbecile, who are simply suffering from a congested brain? A brain whose inflow of venous blood from the nose is greater than it can accommodate and whose delicate cell structure is kept in an unnatural state. Let me illustrate these remarks by a case. It is a rare one I acknowledge, but children of the same kind may at any time appear in your classes. A girl ten years of age was brought to me last fall for deafness, associated with nocturnal mouth breathing. The hearing was much impaired, but sufficient was left to permit the child to be trained by the voice. The intelligence was of low grade, the child was quite at home with playmates of half her years, but did not associate with children her own age. The memory was very poor and the temper uncertain. The removal of an enlarged third tonsil from the naso-pharynx improved all the conditions. The mental improvement indeed was greater than the aural. The delight of the parents can well be imagined, for instead of having their child possessed of a brain of naturally poor quality, they found her with one whose functions had been simply in abeyance. A brain of retarded development, if you prefer so to express it, and not one which was blighted and could never develop. It is likely that in this child the avenues by which the blood returns from the face to the brain-case were either more numerous or larger than usual,

so that the coverings of the brain, receiving as they do normally some of the blood from the nose, received in this instance, owing to the diseased state of the nasal chambers and naso-pharynx, too much. It must be borne in mind that the cavities within the brain also send important tributaries which cannot flow in any but the one way to the blood-tracts of the coverings of the brain. Now, if these tracts are already overfull by reason of the morbid states of the nose, the return blood from the interior of the brain can scarcely escape at all. Is it not reasonable to infer that under these conditions the brain ceases to expand? It is not going too far, I believe, to make a yet larger inference, namely, that children who are really defective in intelligence, whose brains cease to grow, and yet do not have disease of the nasal chambers or of the naso-pharynx, may have as an essential cause some persistent interference with the return flow of blood from the interior of the brain. However, this may be so far as you are concerned, the relation between cause and effect is sufficiently exact to serve as a guide in watching the condition of your pupils.

In connection with imperfect development of organs I wish to make a few remarks on the so-called "change of voice." It is well known that in the transition period of youth the voice loses its treble quality and somewhat irregularly assumes the qualities of the adult. It is a critical period in the history of the voice and its musical training is conducted with risk. Many a fine voice has been lost by disregard of this fact. Is it not probably true that since the training of the voice for song and for speech have much in common that it might be well to relax on rigid methods of vocal gymnastics during early puberty? May not some phases of intractableness which you notice at this time be considered as due to this change, and is it not wise to treat the situation conservatively?

I have been surprised to hear that little or no distinction is made between pupils who are congenitally deaf and those who have become deaf by disease. Of course, we may have disease affecting the ears before birth. But after excluding the small group of cases which might possibly be placed under this category there remains the essential grouping, viz., a morbid condition which is congenital or acquired. A congenital peculiarity is almost never isolated. A defective brain is apt to be associated with defective arrangement of the muscles of the extremities. If the defect determining congenital deafness lies in the brain, at the origin of the nerve of hearing, it may be expected that something other than this defect exists, if not in the brain then in some other region of the economy.

Would it not be well to have made careful studies of the physical and mental peculiarities of this class of subjects? I believe that if this were done facts of interest might be elicited. It is true the facts when obtained might have no practical application to your work. They would be, nevertheless, warmly welcomed by scientific men, and it is not improbable that they might prove to be of value to both teacher and scientist. To be conclusive, the observations desired must be conducted by students who are familiar with the methods of anthropometry and embrace many hundreds of subjects. I would expect pupils who were congenitally deaf to present few difficulties in training, for the reason that the vocal organs have never been impressed by disease. It is not likely that the ravages of diphtheria, scarlet fever, etc., are limited to periods before you begin training, especially since the disposition now exists for training to begin at a tender age. As is well known, diphtheria often leaves the soft palate and pharynx greatly enfeebled —the time during which this enfeeblement lasts is not definitely known, and may be prolonged into the stage at which you ask much of the muscles. Is it not possible that a child who has never heard, thus losing the stimulus to practice these weakened muscles, might have the period of enfeeblement prolonged? On the other hand, since the ground appears to be unbroken, some phases of interference with laryngeal and lingual movements may be due to faulty nerve supply to these parts, since the nerves of the larynx and tongue arise from the same general region with the nerves of hearing.

Respecting the condition of all children, whether deaf or hearing, and if deaf, whether suffering from congenital or acquired forms, the essential question arises, are the vocal organs in a normal state at the time the oral training is being conducted?

During the past two years I have seen a number of the pupils of the Pennsylvania Institution for the Deaf and Dumb. These children have been referred to me by the physician, Dr. H. W. Wharton, on account of disease of the throat, nose or ear. I was so impressed with their condition that I suggested to Mr. Crouter, the able principal of the institution, that a systematic examination of all the pupils be made. Consent having been obtained, my assistant, Dr. Arthur Ames Bliss, undertook this really arduous labor, and has just completed an elaborate study of all the children in the Manual Department. I have been permitted by Dr. Bliss to make this statement: Out of three hundred and twenty-four pupils examined, nineteen were found who

had been sent to the Manual Department from the Oral, on the ground of being intractable. Is it not significant that every one of this group of nineteen pupils should have been found by Dr. Bliss to be suffering from some form of disease of nose or throat? It is not time to attempt to draw any percentages from this series of examinations. It is enough for my purposes to invite attention to the fact that disease of the vocal organs in the various forms may thwart your efforts and withhold from the pupil advantages to which he is entitled.

In reply to a question, Miss McDowell stated that there were one hundred and eight pupils in the Oral Department and not quite all of them, I think, had been examined.

DR. ALLEN: I was much struck by some statements in the report of Mr. Crouter of the last meeting.

DR. GREENE: Is it your opinion that the throat troubles are the result of attempting to train pupils? Do the articulation exercises irritate their throats?

DR. ALLEN: I do not know. My assistant undertook the work and the facts come to me, in a sense, at second hand. He made notes and among them I find this statement, and it is, I think, a correct report of what he found.

DR. GILLETT: You say nineteen were in need of surgical treatment?

DR. ALLEN: No, sir; not in need of surgical treatment, but were sent back.

THE PRESIDENT: I may say that in the January *Annals* the number reported present in the year 1891 at the Pennsylvania Institution was four hundred and ninety, and of these, one hundred and thirty were taught articulation.

MISS MCDOWELL: That comprehends all in the Oral Department.

DR. ALLEN: Can any one refer to Mr. Crouter's statement?

MISS MCDOWELL: Do you mean the statement of Mr. Crouter here last year?

DR. ALLEN: I do. I regret very much that Mr. Crouter is not here, as it is unfair to comment on these statements in his absence, but as they have passed under his supervision they have received his authority.

DR. WILLIAMS: I would like to ask what proportions of pupils there are in the Oral Department that had to be transferred to the other department, that is, the Manual Department, and what was found in relation to their progress therein?

DR. GILLETT: What bearing has that upon the voice?

DR. ALLEN: The physical condition of these pupils is unknown. That is to say, those which cannot be trained in the Oral Department. Dr. Bliss has found all of these children diseased. That is, the nineteen which could not be trained in the Oral Department. I inferred from Mr. Crouter's statement in the report of your proceedings of 1891 that something more was being done in the Manual than in the Oral Department. Do the mouth and teeth show any peculiarities? Why should not you get a certain proportion of these defective children in these institutions, and is it not more difficult to detect this, as they cannot speak? I cannot draw any conclusions as I have not any figures, and had not Miss McDowell been present I could not have answered any of them, but I would suggest that you obtain all the statistics that you can.

MISS MCDOWELL: Of the nineteen children there were several, if not feeble-minded, of very low mental ability. There is a difficulty of these children to grasp things properly; they have a loose, limp hand, in going up and down stairs in the way they do.

DR. ALLEN: I will conclude my lecture with some remarks on "Stammering."

While the correction of faulty diaphragmatic breathing is undoubtedly an important part of the training in stammering, it is as certainly true that it may arise from a defective condition of the organs of speech. I have had one case of stammering which was cured by simply increasing the diameters of the nasal chambers. I have two cases in which the cause lay in faulty movements of the tongue, which were corrected by appropriate apparatus. All three cases were reflex in origin. By this term is meant an action determined by a stimulus to motor action, through an impression made on some part of a sensory nerve. Thus, if the sole of the foot of a sleeping person be tickled, the limb moves away from the point of irritation; this movement is determined by the muscles of the limb being induced to contract by reason of a stimulus conveyed to the spinal cord from a sensory nerve, and thence reflected from the spinal cord to the muscles and exciting them to act. The will has nothing to do with such an act. Now, in the first mentioned case, the narrowed diseased nasal chambers excited the diaphragm to faulty and irregular action, and stammering resulted. The faulty action was relieved by removing the causes by which the sensory nerves were kept in an excited state. At all events this person who had had every advantage in training to overcome the stammering, had it disappear *by* itself after a simple surgical procedure.

The other two cases were examples of defect in the size of general efficiency of the tongue, and resultant failure in reaching the roof of the mouth at its anterior part. The causes of the excitements here were in each instance obscure, for the sensory nerves of the tongue were not known to be in an abnormal state. The subject of reflex action is complex, and I cannot with advantage say more about it. Suffice it to say, that " strain " is a fertile cause of reflex actions which are not in themselves physiological. Thus a " strain " on the little muscle in the eye, whose function it is to change the shape of the crystalline lens so as to adapt it for a near vision, may bring on many disturbances in parts of the body remote from the eye. The " strain " in the muscles of the vocal apparatus in attempts to force a badly shaped tongue to do its work may be felt in the entire region of the mechanism of speech, and particularly in the diaphragm, which happens to be a most important factor. But whatever terms may be used to explain faulty associated muscle-movements, there remains no doubt that the two cases mentioned were relieved by enabling the tongue to more easily strike the hard palate, by *bringing the arch of the palate downward. This was easily accomplished by securing the services of a dentist in each instance who adapted a vulcanite plate to the roof of the mouth.* One of the two cases is imperfectly known and is no longer under observation. The other has been more carefully studied and the narration is herewith given with some attention to detail :

A young man aged twenty years, who had been a bad stammerer from early childhood, came under my care in October, 1891. The lad was prevented from being trained in class. Every effort had been made to correct the defect by training at the hands of the best professionals. Examination revealed several physical peculiarities. Almost a man in years the subject retained the larynx and tongue of a boy. That is to say, the parts, *in a measure*, were stunted. I say in a measure advisedly for the parts as seen by the laryngoscope appeared normal. But the thyroid and cricoid cartilages were small, as examined by the finger from the neck, and the tongue was short, falling back to near the molars when the mouth was opened, quite as it does in children. The lower jaw was massive, and especially so when measured from the crowns of the lower molars to the lower border of the side of the bone. This placed the small stunted tongue at a disadvantage in reaching the roof of the mouth. The arch of the hard palate was high and without the broad shoulder so often seen at its abutments near the molars. This increased the difficulties of the already badly-

equipped tongue, since the articulating plane for such sounds as *l* and *s* were rudimentary.

It occurred to me that although the tongue, with the exception of its small size, presented no peculiarities in its attempt to become efficient in speech, became subject through some of its muscle fibres to a strain, which had become habitual and served as an exciting cause to the stammering. Acting on this supposition, I requested Dr. J. Atkinson McKee, an ingenious dentist of Philadelphia, to adapt a vulcanite plate to the roof of the mouth. This apparatus being in position, and Dr. McKee present, I coated the free surface of the plate with a little chalk and water and asked the patient to make an attempt at articulation. The spots from which the tongue removed the white color of the chalk from the plate defined the palatal surface which had been reached by the tongue. (Dr. N. Kingsley's method.) After repeated trials it was seen that the left side of the tongue, between the lip and the part directly in front of the base did not reach the plate, since the left side of the norma U-shaped figure defined by the tongue in the pronunciation of *l* was absent.

I then had Dr. McKee build up on the left side of the plate with a firm composition material, so as to imitate a palate whose sides normally presented broad palatal abutments, and again subjected the patient to a repetition of the linguo-palatal consonantal sounds. This having been accomplished, speech was found to be improved. He was told that now he had a means of practice, nothing more, and that he must use the plate habitually, and remember that he had before him the task of a new articulation, which could only be obtained by labor and care. The results have been most encouraging. He was able in a short time to attend recitations in class. He gained confidence in the ability to pronounce all sounds, thus avoiding that hesitancy which is so distressing in stammerers who are constantly coming up against combinations they cannot attack and as constantly trying to flank them. In illustration of the value he places on his plate, he found one day just before going into the class-room, that he had left his plate at home. He did not venture to begin his recitations without his plate, but returned to his home, a distance of two miles to procure it. This young gentleman is now being carefully trained with the plate in position, at the hands of an expert in articulation-teaching. I have lately heard that his progress is encouraging.

MR. ELMENDORF: Was his articulation improved without the *plate?*

DR. ALLEN: No; except that he had more confidence in himself.

MR. ELMENDORF: From your remarks I infer that the boy reached for his plate as Webster reached for his button, of whom it is said that while at school no boy could ever get at the head of the class until the boy next to him cut off the button, and as Dan was being quizzed he reached for the button and missed it, and missed the question, and the boy got up to the head.

DR. ALLEN: That shows how far defects can be overcome by training. There is an Italian saying to the effect that there are one hundred rules to make a good singer; ninety-nine of them are that the pupil must be born with a good voice, and the other rule need not be mentioned. If a pupil has a grave physical defect he must always have crutches; if a slight one, training may overcome it.

THE PRESIDENT: Do you not often find that stammering is acquired by imitating other stammerers? I remember, when a boy, that my father had a few pupils in his household who were stammerers under his care. My father was called away, and when he returned he found his own son stammering too. I well remember the teaching in my own case before I overcame it, and I know that my father did not have stammerers in his own family after that.

DR. ALLEN: Dr. Greene alluded to the fact of bad habits. I would suggest that there is no such thing as bad habits without cause; it does not matter whether they were always bad or not it only means that the physical basis for them is present. There is absolutely nothing new in what I have said about the mouth; it is as old as Demosthenes who put a pebble in his mouth to overcome a defect in speech.

THE PRESIDENT: While Dr. Allen is reading his telegram, I will read one just received from Northampton:

"Greetings to the Association. May the Second Summer School be as successful as the first. (Signed)

HARRIET ROGERS."

I am sure there must be many present who have questions to ask Dr. Allen on this subject, and if there are any I will be glad to hear them.

DR. GREENE: In conversation with Dr. Allen yesterday, I remarked to him that the medical profession has treated articulation-teachers in the same way that it has treated the undertakers. When a child becomes hopelessly deaf and is turned over to one of our schools, then the physician does not care any more about him than when one of his patients has been handed to the undertaker.

The next time I have to make that reproach I shall have to except Dr. Allen. He has given us a great many valuable suggestions. His lecture has given rise to an idea in my mind that it would be well to have our charter amended; I think it should be made one of the principal objects of this association to induce the medical profession and men of science in general to give more attention to articulation teaching than they have done. We have been thrown on our own resources until now, and I hope that we will be able to benefit by them. Dr. Allen has asked the question whether there is any difference between children congenitally deaf and those who become deaf later. I suppose he speaks of cases where deafness has been acquired before the child has learned to speak. Mr. Hill, the well-known German teacher and writer, remarks in one of his books that he has noticed such a difference. He says that there is a great difference between the voices of children who at one time had spoken and those who never spoke.

LECTURE II—FRIDAY, JULY 1.

THE TONGUE.

LADIES AND GENTLEMEN: You may remember that yesterday I described an instance in which stammering was relieved by bringing a part of the plane of the hard palate near to the tongue, thus enabling the contacts between the two parts to be accomplished with advantage. With your permission I will speak to-day particularly of "The Tongue."

It is likely that some features embraced in the study of the case mentioned are capable of yet wider application. It is of interest to remember that vocal organs are those which have been adapted from others that have functions pertaining originally to the acts of breathing and those in preparation of food for digestion. If we reflect for a moment we will be convinced that the parts of the mouth are primarily used for coarse purposes. The teeth cut, tear and grind food; the lips seize food, as a horse picks up grains of corn, or lumps of sugar from its master's hand; the tongue at least at its tip is also prehensile, as is seen well developed in the giraffe where it is used in bringing down boughs and twigs to the upstretched mouth. In ourselves the parts named keep the teeth supplied with food. They might be compared with millers whose business it is

to see that the hopper is kept filled with grain. When the tongue and cheeks are palsied this work must be done by the fingers.

But the coarse use of organs adapted for speech is not confined to the mouth. The muscles at the orifice of the larynx are constricting in function; that is to say, their use is primarily to narrow, if not to close, the orifice as one closes the mouth of an old-fashioned purse by a string. The object of this is to prevent food from being squeezed into the wind-pipe when in the act of swallowing it is being forced into the gullet.

The glottis is surmounted, as you know, by the leaf-shaped cartilage—the epiglottis. It is customary to describe this as a trap-door which the bolus of food forces over the glottis at the time of swallowing. Yet when the projecting part of the epiglottis is lost by disease, cut through by the knife of the cut-throat, lacerated by bullets or otherwise absent, the subject is able to swallow both solids and liquids. How is this to be accounted for? The answer is found in the muscle-bundles which tend to pull the lips of the glottis against each other. While it must be acknowledged that the epiglottis may be pulled down so as to close the glottis, its muscles suggest that it is constricted much as is the glottis itself for the two constricting sets of bundles are closely related, that is to say, tend to pass into each other and are supplied with nerves much in the same manner.

There is a disposition in the lower animals for the epiglottis to be narrowed and to project upward, so as to rest on the posterior surface of the soft palate. The object of this appears to be to enable the air entering the nostrils to pass directly into the windpipe, even when the mouth is closed from the throat, as is seen in feeding under water, in the prolonged grip of carniverous animals in securing prey and in many similar acts. Is it not fair to conclude that in man also the upward and forward trend of the epiglottis is in reminiscence of its ancient use? The single pecularity in man's case lies in the fact that the face has developed in a remarkable manner in a vertical direction, and has widely separated the soft palate from the epiglottis, thus permitting air, on occasion, to pass freely through the mouth into the throat. At all events we find in man the epiglottis to be rudimental and probably to perform indifferently, if at all, its primary functions.

In view of these statements how unimportant become the speech values of the epiglottis! At best the cartilage is but an accessory and the vocal adaptations to this end which are within its range appear to be of the same character as are those of the base

of the tongue, namely to assume varying degrees of concavity with the base in the act of formation of some of the vocal sounds.

I will dwell for a moment longer on the subject of the muscle fibres which constrict the orifice of the glottis. When a true constriction or pursing takes place, no distinctions between a right and left function is discernible. Yet in the body we find the muscles arranged into rights and lefts for the most part. Certainly, most of the highest forms of muscle, namely those which are most responsive to the will, are arranged in pairs, one member of which is on the right and the other on the left side of the body. In a general way it can be said that the muscles about the tubes are constricting and single and act imperfectly under the control of the will, and those about the skeleton non-constricting and are disposed in pairs. The former are involuntary, that is to say, without control of the will; the latter are voluntary, that is to say are under such control. One cannot determine by the will what the size of a given blood-vessel or bronchial tube shall be; but one can within known limits determine whether a finger shall move or be at rest. In the throat and mouth the involuntary and voluntary muscles appear to merge. The constrictors of the glottis and pharynx are not as good examples of their kind as are those of the blood vessels or the intestines; the right and left muscles of the throat as in the muscles passing between the palate and the tongue, or palate and the pharynx, again, are not as good examples of the paired kind as are those in the hands. Hence they are called semi-voluntary muscles. The tongue is notoriously an unruly member. Any one endeavoring to control its motions in inspecting the throat will be convinced of the truth of this statement. Movements of the muscles of the larynx are quite beyond our control in cough. Is it not curious that it is in a region under such imperfect control that most of the essential organs of speech should lie? How precise becomes the study by which the derangements of an adjustment so delicate are to be corrected!

In order to understand the use of the tongue in speech, one must remember the fact that it is composed of muscles in pairs as the genio-hyo-glossus; the hyo-glossus, as well as fibres which belong to those which are imperfectly paired, as the lingualis and transversalis. It is an assumption that some of these are more under the control of the will than others, but none, I am sure, to state that the tip is certainly more precise in its movements than the base and is much less unruly, and that while we have nerves which control the tongue and supply it from the sides and therefore in

pairs, that none are supplied as definitely to those which are toward the centre and are not in pairs.

The distinctions between the right and the left sides of the tongue are certainly greater toward the base than at the middle or the tip of the organ. The U-shaped or V-shaped median depression which is conspicuous in the mechanism of some of the vowels may be referred to in evidence of this symmetrical disposition of the dorsum. The convexities on the sides of the dorsum answer to the right and left values, while the median depression corresponds to the neutral territory between. But the front part is not so grooved in any lingual act. The tip and the region directly back of it never act as rights and lefts but always as a unit, hence no groove or other depressed interval is seen on this part of the dorsum.

If I am correct in making these statements, is it not likely that articulation teachers may have an entirely distinct group of errors in the mechanism of speech, in which the basal part of the tongue enters, as contrasted with those in which the tip and associated regions enter?

From the statements just made the terms "base and tip of the tongue" are not exact, for the part at which the disposition for the groove to be well defined and where it ends is not sharply limited. It is certainly desirable that terms should bear a relation to use and that organs should be studied when practicable in connection with the work that is done by them. The terms "base of the tongue and tip of the tongue" leave the intermediate surface of the dorsum a *terra incognita*. I will venture upon this ground and attempt to outline it. I assume that between the base and tip are two regions which I name the *pre-base* and the *post-tip*. So that there are four regions o the dorsum.

The *tip* is the hem which unites the two borders. It extends from the anterior end of the tongue a short distance only backward.

The *post-tip*, which extends from the tip for about an inch, and is usually distinguished by a median linear depression when the tongue is at rest.

The *pre-base* lies, of course, in advance of the base and ranges from the circumvallate papillæ to the end of the linear groove of the *post-tip*. It is often furnished in the centre by an oval clump of coarse papillæ, as is here shown. (The figure of the tongue from Sappey's "Anatomy" was here referred to.)

The *base* lies between the circumvallate papillæ and the frenum, between the tongue and the epiglottis.

As I have said, in order to determine the signficance of these or any other parts of the economy, the parts themselves must be seen at work. In the case of the tongue they must be seen in action. Thus, the tip and the post-tip are the parts which are prehensile, and it is the prehensile part which is adapted to strike the lips, teeth and hard palate directly back of the teeth. The *post-tip* can be made separately from the tip to strike the hard palate back of the teeth, as indeed it habitually does in infants in the beginnings of speech, and probably takes the place of the tip in the acts usually performed by this region, and probably enters into the mechanism of the lisp, since when the tip is developed but not used it is thrusted forward, so that the strike is falsely made by the post-tip while the tip lies between the teeth.

The *pre-base* is the part which is actively depressed in the centre at the time of the formation of vocal sounds.

The *base* is not seen and its action is obscure, though it is likely that from the pitcher-lip form of the epiglottis that it lies in a broad, shallow concavity at the lingual base.

If one looks in the mouth of a child (care being taken that attention be not directed to the observation that is intended), it will ordinarily be seen that a play of little dimples will follow one another on the tongue. They are more common in the region back of the tip than toward the base and *near the borders* than the centre. The tip and borders of the tongue in advance of the prebase create the positions seen in *l* and *r*, the *l* being the tip and borders raised and in contact with the palatal vault, plus vocality, while the *r* is the tip and sides raised, but not in contact with palatal vault, plus vocality. One cannot fail to notice the manner in which *l* and *r* are often substituted, especially in the speech of some Germans, and of the difficulty with which Chinese pronounce the English *r*, always substituting as they do the English *l*. How the study of speech defects may confirm the affinity between these speech sounds I must leave to your judgment. Certain it is that *r* may substitute for *l* in some conditions into which fatigue enters.

Notwithstanding the intimacy of the ear with the sounds of the human voice, it is a rare thing to see the tongue, during the acts of speech, other than in the foreshortened views of the tip and the undersurface to a point near the frenum. Should the mouth be open, the mechanism is at once destroyed, while the observation of the intra-laryngeal actions, unsupplemented by consonantal mechanism, is of scarcely any value.

Sometime ago I had an opportunity of studying the motions of the tongue under peculiar circumstances. Through the kindness of Dr. Bliss a man came under my observation who had lost the cheek tissues on the left side from cancer. The interior of the mouth was exposed, while the lips remained intact. The following are some of the general statements I can make respecting the motions of the tongue and soft palate in this case: The disease has destroyed a portion of the hard palate, but a pad of cotton being placed in the opening, articulation was perfect. When the pad and the dressing are removed, the voice lacks resonance, and some of the consonant sounds are merged. Thus *t* and *d* become *g*, etc. But the vowel sounds can be readily determined, and the play of the tongue and velum in producing them to be physiological. The hard palate being destroyed on the left side caused the tongue in many movements to ascend higher than on the right.

The following embrace the forms of the tongue which correspond to the production of definite sounds:

A—First sound as in *father*. The tip of the tongue is in contact with the lower teeth. The portion immediately back of the tip slightly raised above the plane of the tip and concave. The remainder of the tongue, as far as could be seen, was concave and shallow. The sides of the groove were defined by a broad rope-like eminence, which appeared to answer to the linguales fibres, lateral border, this eminence with quivering depression. The first sound of *a* was produced in one trial, by withdrawing the tip of the tongue from the teeth, the remainder of the tongue not being modified from the form as above described. The velum is slightly raised and the space between it and the tongue is slight. The uvula lies within the concavity, but does not touch its sides. No forward motion occurs at any of its parts, but the entire organ is depressed, the tip most so, and the basal parts least.

In the second sound of *a* as in *fate*, the tip recedes slightly, if at all, the part directly back of the tip becomes abruptly convex, and moves slightly forward. At the beginning of this sound the concavity at the base resembles that of the first sound. As the mechanism of the sound progresses the concavity deepens and narrows and the base ascends. The palate also ascends and the uvula is farther above the concavity than in the first sound.

In the first sound of *e*, as in *feet*, the tip remains in contact with the lower incisors, the part directly back of it becomes sharply convex and it with the rest of the tongue almost touches the hard palate, and the hinder concavity becomes greatly narrowed and

deepened. The shape in this sound is the same as the shape at the end of the second sound of *a;* thus confirming the views announced by Dr. James Rush, in his work on the voice. The uvula is raised and the space between the base of the tongue and velum large. Thus the tongue touches the palate in front but not behind.

In the second sound of *e*, as in *get*, the mechanism is the same as in the first sound; the expulsive power of the outgoing current of air is however greater and excites vibration in the uvula.

In the first sound of *o*, as in *old*, the entire tongue recedes and the tip is therefore carried back from the lower incisors, and the curved base is less distinctly seen than in the above-named sounds; indeed, the tongue appears to be raised in the middle of the groove. The portion back of the tip as well as the base become concave in the centre. The velum is raised as in the first sound of *a*.

In the second sound of *o*, as in *boot*, the tongue recedes to a greater extent than in the first and becomes to a corresponding degree difficult to analyze. The base, however, is concave and the sides of the tongue more elevated than in the first sound.

In a second trial of *o*, as in *old*, the tip not carried from teeth, yet the base goes back, the velum is abruptly raised and the uvula moves forward somewhat as *e* in *get*. The *o* in *old* certainly does at times recede from the teeth.

In a second trial of *o*, as in *boot*, the tip recedes more than in *o* in *old*. The tongue recedes.

THE PRESIDENT: I am sure that Dr. Allen will be glad to answer any questions.

DR. GREENE: I should like to ask Dr. Allen whether he has ever had an opportunity of observing a person who had no tongue at all.

DR. ALLEN: I never have, and I very much regret that I never had such an opportunity.

DR. GREENE: I remember having read somewhere about a patient in a French hospital having been observed in that condition and he could talk.

DR. ALLEN: This goes back to the time where cutting out the tongue was done for heresy.

MISS WARREN: I called myself on Dr. Dreer to find out whether it was true that he had such a patient and he said it was not. He said that articulation was not plain or distinct.

DR. ALLEN: The tongue can never be entirely removed except by an operation, taking out much more than the tongue. If this

were done it would destroy much of the breathing apparatus and has never been attempted. Amputation of the tongue means cutting off a part of the tongue, and speech will be retained if it is cut off in front of the prebase, and if behind that point speech is lost.

DR. GREENE: Have you ever had a case where the point of the tongue was gone?

DR. ALLEN: I never have. In this man of whom I have been speaking, in fatigue for the *t* and *d* to become *g*, he did not throw the tongue up and somewhat back.

I would like to make a few additional remarks. I find it difficult to make series of statements, which will be succinct and at the same time sufficient, without either under- or over-stating. I have said that the groove on the surface of the tongue is always present. *As a rule* it is present. I am afraid I often put specimens on the lecture table and forget to say anything about them afterwards.

I brought this skull from Philadelphia and I have not said anything about it. I thought it would be a good thing to illustrate what I have been talking about. In this skull we find the bones of the nose projecting and within there are two chambers. We speak habitually of a right and left nasal chamber as defined by a wall between, and yet no one would think of using the expression of right and left nose for the external nose. Another point, there is in the lower jaw directly back of the chin a little tubercle; man is the only animal that has it, and as man is the only animal who has speech I would ask is there not some connection between the presence of the tubercle and speech? The tubercle gives origin to two muscles, the geniohyoid muscle and the geniohyoid glossus muscle, the latter extending into the substances of the tongue. This diagram represents the muscle, some of the fibres go to the tubercle and some arise from it, and I think that there must be some connection between the spine and the muscles of speech. I know that some children who have oral respiration have these muscles in a tense state. If this be true that there is connection between these muscles and speech it may be a cause of some of the defects, and it is a good sign to call your attention to; if you find the floor of the mouth drawn well down on the neck, it is not in a normal condition.

THE PRESIDENT: There are two vowel sounds which teachers of articulation have difficulty in teaching—sounds of *oo* and *o*. Deaf children are rarely given them correctly, on account of the small

aperture between the lips; the child cannot see the interior of the mouth, and I shall be glad if you can tell us anything about the lingual position of these sounds.

DR. ALLEN: I have nothing to add to the remarks already made. I regret that I have nothing more definite to say. Permit me, sir, to make a suggestion. Could not the phoneidoscope be used in connection with articulation work? The wave-marks on a soap-bubble film can be thrown on a screen and shown to the class. A very beautiful play of colors is produced for each sound produced by its voice. The teacher can train the pupils how to say *oo*; the child can practice until the characteristic play of color is secured. I will be glad if this will be an answer to your question. The mechanism of the sounds used in pronouncing *oo* lies so far back that it cannot be seen.

THE PRESIDENT: In regard to these vowels, can you observe any elevation of the back part of the tongue in *oo*?

DR. ALLEN: The sides are raised; in the photographs they are elevated; that is to say, the concavity is more marked.

DR. GREENE: Dr. Allen was kind enough to explain why the skull was on the table; I would like to know why he borrowed my larynx.

DR. ALLEN: I think I wanted it for the following reasons: The hyoid bone is U-shape in perfectly developed children; in those whose voice should be undergoing change but is retarded, I find that the ends of the posterior arms (cornua) are drawn toward each other. I believe that a careful study should be made of the hyoid bone; it can be done by pressing the index finger and the thumb on it; this can be done without difficulty, and you can tell whether the bone is normal or not. Sometimes it is exaggerated. Instead of being U-shape it is bell-shaped, the arms extending outward (diagram on blackboard showing different shapes). I have found this of great use. Sometimes when the cornua are thrown out there is loss of voice.

DR. GREENE: Will you please tell us something about the laryngeal parts when the voice is changing?

DR. ALLEN: I have not made any observations on that point. Dr. F. R. French, of Brooklyn, has made some excellent observations on the positions of the vocal cords in the singing voice; he is a leading authority; he has made some beautiful photographs. I refer you to his papers.

DR. NOYES: Please give the name of the instrument throwing bubbles.

THE PRESIDENT: The phoneidoscope was invented by Sydney Taylor, of England; the instrument consists essentially of a pipe of large diameter, about the size of a telephone mouth-piece, and a film of soap bubbles is made so as to cover them with a flat film. There is a speaking tube, so that the vibrations of air goes on the side of this film, and this is thrown in vibration as you speak. If you reflect the light from this film on a screen, you get a most brilliant display of color and the character of the color, depends upon the thinness and form of the film while the film is in vibration.

MR. RAY: Is it necessary to have the room darkened?

THE PRESIDENT: Yes, it is advisable to have it dark. The film is apt to break and we have not obtained any constant patterns of definite designs. It is an interesting apparatus. I saw it when it was first devised and was present at some of the earlier experiments, but it has since been improved. I am not well acquainted with these improvements.

MR. BOOTH. I suggest the possibility of inventing an instrument by which the deaf could read speech, not upon the lips, but upon the instrument itself. Is that possible?

THE PRESIDENT: It may be. That is the idea I had many years ago, and which led naturally to the invention of the telephone, and the telephone was suggested to me from that. That was the direct attempt to put in execution your idea. I had hoped to employ the manometric capsule of Kernich, which consists of a cavity in a piece of wood divided into two parts by a membrane; one part of the membrane is filled with gas from a gas pipe, and one part is burned so that you have a flame produced about one-half to three-quarters of an inch in height, and the other half connects with the speaking tube through which you speak, so you have connection of vibration through a membrane to the gas and through the gas to the flame, and you have vibration of the flame as often as you have vibrations of the membrane,—the vibrations of the flame being magnified by looking at the reflection in a series of mirrors arranged around a support and caused to rotate rapidly,—you see the reflection as a band of light and every vibration of the flame appears as a wave or undulation of that light, and when you speak through the mouth-piece you have most beautiful vibrations, and it was by the study of the shapes and forms of these vibrations that I was led by the different steps to the invention of the telephone. How far the apparatus can be used in the instruction of the deaf is problematic; further acquaintance with the vibrations and characters of sound leads me to be more doubtful about it now than then.

MR. CALDWELL: Dr. Allen spoke of nineteen pupils transferred from the oral to the manual department; I should like to know whether they were operated on.

DR. ALLEN: One was. As I said yesterday that report is just completed. Dr. Bliss placed it in my hands just before I left the city, and I have not had an opportunity to analyze the cases, and I intend when I return to go over the pupils with care. At present I cannot say anything in addition to Dr. Bliss' report. I accept it as one in every way reliable. The children I treated were selected by Dr. Wharton, the general physician, and I am not informed whether they belonged to the oral or to the manual department. It is evident that the pupils in the oral should be carefully studied. It must be remembered that of the pupils Dr. Bliss examined he found these nineteen which had been sent back from the oral to the manual department, and no proportions had been given as to how many of these untrainable cases were in the oral department.

MR. CALDWELL: I think it would be interesting to know whether these nineteen pupils have undergone any improvement mentally, if they have been operated on.

DR. GILLETT. I do not rise to ask any questions, but to propose what I am sure will meet with most hearty approval. Dr. Allen has not only entertained us delightfully on two occasions, but has certainly instructed us and has given suggestions which we will carry to our homes. I move a vote of thanks to him for his interesting addresses.

MR. RAY: I arise to second the motion, and I would like to emphasize it in a peculiar way, if I knew how. I believe, sir, that I will move an amendment to the motion by asking that a rising vote be taken. I have not only been entertained, but exceedingly highly instructed.

DR. GREENE: I second the motion that we have a rising vote for the most charming and valuable instructions he has given.

THE PRESIDENT: It gives me great pleasure to put this motion. I am sure that none of us have ever listened to a more important and instructive lesson than we have received from Dr. Allen. It is a pleasure to have met him here and to have listened to his remarks. I will ask the audience to carry it by a rising vote of thanks.

DR. ALLEN: I assure you it has been a great pleasure to me to be present at this meeting, and I must thank you for the very courteous manner in which you have listened to my remarks.

Lectures delivered by Dr. A. Hewson, of Jefferson Medical College, Philadelphia.

LECTURE I—JULY 5, 1892.

THE ANATOMY AND PHYSIOLOGY OF THE EAR.

The sense of hearing is lodged in the temporal bone, which is placed in the middle, lateral and basal aspect of the skull, and constitutes, with its cartilaginous external appendage, the organ of hearing. It is divided into three parts—the external, middle, and internal ear.

The *external ear* includes the pinna and external auditory canal; the *middle ear*, or tympanum, having a passage into the upper part of the pharynx—the Eustachian tube. The *internal ear* includes the osseous and membranous labyrinths.

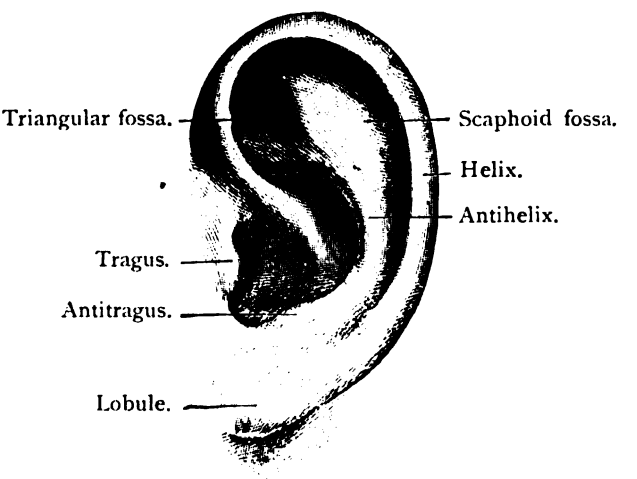


Figure 1.
THE EXTERNAL EAR.

The pinna, or auricle, is made up of cartilage and muscles, and is covered by skin. The external rim is known as the helix, the fossa beneath it known as the scaphoid fossa, and the internal rim known as the antihelix. The projection immediately in front of the opening into the auditory canal is known as the tragus, the

depression below it as the incisura, and the elevation at the most extreme lower portion of the antihelix is known as the antitragus. The soft, lower, most dependent portion of the auricle is known as the lobule. This is non-cartilaginous, and is composed principally of fat. A triangular depression, immediately above the anterior extremity of the antihelix, is known as the triangular fossa. The muscles which move the auricle are the attolens, or levator auriculæ, the attrahens auriculæ and the retrahens. This last is sometimes double. The attrahens arises from the fascia covering the temporal muscle and is inserted into the expanded portion of the auditory canal. The attolens aurem arises from the fascia covering the zygomatic arch, and is inserted into the expanded portion of the auricle, internal to the anterior margin of the helix. The retrahens, sometimes double, arises from the mastoid process and is inserted into the back part of the concha or auricle.

The muscles placed upon the pinna, or auricle, are of minor importance, and need only be mentioned: the helicis major, helicis minor muscle of the tragus and the muscle of the antitragus, situated on the processes named. In the lower animals, the action of the muscles just mentioned plays an important part in the function of hearing, but in the human species their function is lost, the muscles directing the pinna towards the sound, as is exemplified in the horse and cow. In some of the diving animals, the muscles of the pinna produce a kind of valve which closes the external auditory canal, and thus prevents injury to the external auditory membrane beneath.

The external auditory canal is continuous with the pinna and is of the same structure, but is not entirely cartilaginous. It is from 3 to 3.25 ctm. long, (1⅛ to 1¼ inches), 8 to 9 mm. high, and 6 to 8 mm. broad, externally. Its direction is inwards and upwards, then downwards, forwards and inwards. Consequently to see the lowermost portion of this canal, the auricle must be drawn upwards, outwards and backwards. The canal itself is not entirely cartilaginous, two-thirds of it being cartilaginous and one-third osseous.

The bony portion of the temporal bone consists of a squamous or scale-like portion, situated at the lateral aspect of the skull and arranged vertically; the mastoid portion at the lower and more posterior part, and the petrous, or hard, triangular portion, placed at the basal aspect and projecting inwards towards the centre of the skull and a little forwards. Passing from the junction of the squamous and petrous portions, there is an arch-like process tu

upon itself, which forms the zygomatic arch, uniting in front with a similar process from the malar bone. In the recess between the base of the zygomatic arch in front, the lower margin of the squamous portion above, and the mastoid portion behind, we have the auricular process, which is developed from a separate centre of ossification, and to which is attached the cartilaginous portion of the external auditory canal. This is also the base and outer part of the petrous portion of the temporal bone, in which we have lodged the sensitive organ of hearing. The petrous portion of the temporal bone contains the middle ear and the internal ear, is pyramidal in shape, has two surfaces in the cavity of the skull and

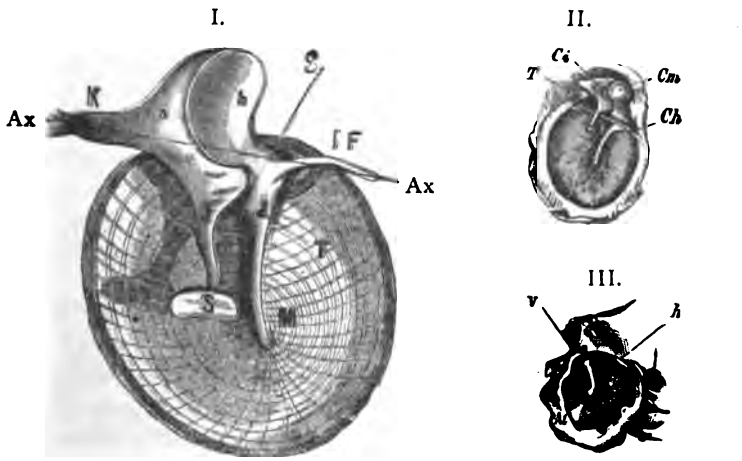


Figure 2.

I. Tympanic membrane and auditory ossicles (left) seen from within, *i. e.*, from the tympanic cavity. *M*, manumbrium or handle of the malleus. *T*, insertion of the tensor tympani ; *h*, head ; *lF*, long process of the malleus ; *a*, incus, with the short (*K*) and the long (*l*) process ; *S*, plate of the stapes ; *Ax*, *Ax*, is the common axis of rotation of the auditory ossicles ; *S*, the pinion-wheel arrangement between the malleus and incus.

II. Tympanic membrane with auditory ossicles (left) seen from within. *Ci*, incus ; *Cm*, malleus ; *Ch*, charda tympani, *n.* ; *T*, pouch-like depression.

III. Tympanic membrane of a new-born child seen from without, with the handle of the malleus on it. *At*, tympanic ring with its anterior (*v*) and posterior (*h*) ends.

one surface at the base of the skull. Through the surfaces in the interior of the skull we have passing the blood-vessels and nerves which nourish this portion of the organ, and transmit the nerves which give special sense to this portion of the bone.

At the base of the external auditory canal we have situated the tympanic membrane, which is lodged in a special rim of bone which subsequently forms the auditory process. This rim of bone is not complete. It allows the membrane to fit into it as the

crystal of the watch is fitted into the rim which holds it. The rim is wanting at its upper part, and is there cartilaginous. In the very young child this rim of bone is not attached to the base of the petrous portion, but as age advances it is, and is continued outward as the auditory process. The tympanic membrane is loosely fixed in this bony rim. It is an elastic, unyielding and almost non-extensible membrane of about $\frac{1}{10}$ of a millimetre in thickness. It is elliptical in form, its greater diameter being 9½ to 10 mm., and its lesser 8 mm., and is fixed in the floor of the external auditory canal at an angle of about 40 degrees, being directed from above downwards and forwards, downwards and inwards.

The membrane consists of three layers; that towards the external auditory meatus is covered with a thin, transparent layer, similar to the skin of that canal: that towards the cavity of the tympanum is covered by mucous membrane, with squamous epithelium upon it; the central layer is fibrous, with radiating fibres on its outer surface and circularly arranged fibres on its inner surface. This central layer is fixed to the rim of bone already alluded to, and to the cartilage above where this rim is wanting.

Function of the Tympanic Membrane.—The tympanic membrane receives the vibrations of the sound-waves which have penetrated through the external auditory canal and set it in vibration. These vibrations correspond in number to the vibrating movements of the air. Vibrations are also received by transmission through the cartilaginous and osseous portions of the external auditory canal. They are also partly received by contact with the bony portion of the skull.

According to Kessel, certain parts of the membrane vibrate to certain tones, the shortest radial vibrations at the upper part of the anterior, and the upper segment vibrates to the highest tones, and the largest fibres at the lower segment to the deepest tones. At the upper part of the posterior segment noises are transmitted. This membrane also possesses the property of taking up all vibrations with nearly equal intensity, and has also the property of a resonating apparatus, that is, it causes a summation of the energies of successive vibrations, which is due to the funnel shape of the membrane and to the radial and rigid insertion of the handle of the malleus. Consequently any thickening or inequality of the tympanic membrane will interfere with the acuteness of hearing, owing to its diminished capacity for vibration. Holes in and loss of the membrane produce a like effect. Toynbee has intro-

duced an artificial membrane, which has taken the place of the normal membrane in certain instances.

Cavity of the Tympanum. The cavity of the tympanum is irregularly shaped, laterally compressed, communicates posteriorly with the mastoid cells anterior with the pharynx through the Eustachian tube, contains air transmitted by this tube, and contains three little bones—the tympanic ossicles—by means of which vibrations are transmitted from the tympanic membrane to the internal

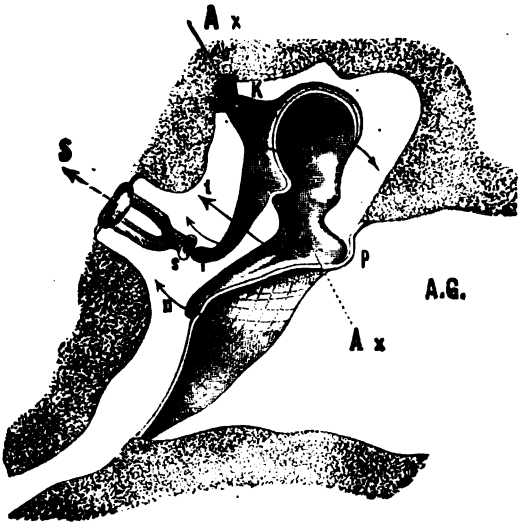


Figure 3.

TYMPANUM OR MIDDLE EAR, AUDITORY OSSICLES (left) MAGNIFIED.—*A. G.*, External auditory meatus; *M*, membrana tympani which is attached to the handle of the malleus, *n*; and near it the short process, *p*; *h*, head of the malleus; *a*, incus; *k*, its short process with its ligament; *l*, long process; *s*, orbicular ossicle so-called; *S*, stapes; *Ax Ax*, is the axis of rotation of the ossicles; it is shown in perspective, and must be imagined to penetrate the plane of the paper; *t*, line of traction of the tensor tympani. The other curved arrows indicate the movement of the ossicles when the tensor contracts; *t*, grooved prominence.

ear. The ceiling of this cavity is very thin, and is separated from the cavity of the skull only by a thin plate of bone. The floor is very narrow, and is separated similarly from the jugular fossa. The outer wall is principally formed by the tympanic membrane and the bone in which it is placed above and below. On the outer wall is placed the chorda tympani nerve, which enters a minute orifice, the iter chordæ posterius, and leaves the cavity by the iter chordæ, anterius, entering the canal of Huguier. The inner wall is vertical and presents the finestra ovalis and finestra rotunda, between which we have a grooved promontory, this being made by the first turn of

the cochlea and the ridge marking the course of the Fallopian tube. The finestra ovalis is the opening into the vestibule and is occupied by the base of the stapes, held in place by a delicate annular ligament, in addition to the membrane derived from the cavity. The finestra rotunda leads into the cochlea, and is closed by a membrane sometimes known as the secondary membrane of Scarpa from its structural resemblance to the tympanic membrane. The posterior

Figure 4.
RIGHT STAPEDIUS MUSCLE.

wall presents a pyramid, which is hollow and lodges the stapedius muscle, and also the openings into the mastoid cells and the mastoid antrum, these cells being lined with the same membrane which lines the tympanic cavity. The anterior wall is separated from the carotid canal only by a thin layer of bone. It presents the orifice of the Eustachian tube and an opening for the tensor tympani muscle.

The Eustachian tube is from 4 to 5 ctm. in length (1¼ inches), 2 to 3 mm. in width, and, as has been stated, is the ventilating tube

Figure 5.
EUSTACHIAN TUBE AND TENSOR TYMPANI MUSCLE (left side).

of this cavity. It must be remembered, however, that this tube is situated at the upper part of the anterior wall, and not at the lower. The function performed by this Eustachian tube is to keep the tension of air within the cavity of the tympanum the same as that within the pharynx and the outer air, because only when the tension is the same on both sides of the tympanic membrane, can its

normal vibrations take place. The tube, however, is usually closed, and the surfaces of the mucous membrane are usually in contact. During swallowing the tube is open, which is brought about by the contraction of the tensor palati muscles, or, as Trölsch has expressed it, the spheno-salpingo-staphylinus civæ abductor tubæ, which is inserted into the membranous portion of the tube. When the tube is closed, consequently, the vibrations are not transmitted as readily by the ossicles as when it is open. The tube being closed permanently, the air in the cavity of the tympanum becomes rarefied, and the function is again interfered with. The functions, therefore, of the Eustachian tube are to form an outlet for the cavity of the tympanum, maintain the equilibrium of air in that cavity in consonance with that in the external auditory canal, and prevent the rarefaction of the air in the cavity of the tympanum produced by successive swallowing. The tube may be opened by the method used by Valsalva, performed by closing the nostrils and mouth and making an effort to blow the air out, without accomplishing it. This forces the air through the Eustachian tube into the cavity of the tympanum and consequently distends the tube.

The tube is partly cartilaginous and partly bony ; bony towards the cavity of the tympanum and cartilaginous towards the pharynx, which cartilaginous portion becomes expanded and enters the upper and lateral aspect of the pharynx above the line of the hard palate. It is surrounded by some muscular fibres and lined by mucous membrane, which is continuous with that of the pharynx.

From the foregoing remarks you will observe that the tympanic cavity is an osseous box, and is therefore a protective organ to the bones which it contains. The air space is also increased by its connection with the mastoid cells and by the ventilating character of the Eustachian tube. It is about 13 mm. in height and 2 to 3 mm. in breadth. The ceiling and floor being made of such thin plates of bone, are liable to fracture, and hence the appearance of blood in the external auditory canal in cases of fracture at the base of the skull.

The Eustachian tube is often closed by chronic catarrh, or narrowed from cicatrices, or from hypertrophy of the mucous membrane, or from tumors. The deafness thus produced is sometimes relieved by the introduction of a cathether into this opening and a dilatation of the tube, at the same time air being forced through this tube into the cavity of the tympanum. Effusions in the cavity of the tympanum of course will prevent the transmission or vibrations through the ossicles. If the inflammation is of a sufficiently

high degree, there may be caries of the ceiling of this cavity, and from its thinness inflammation of the meninges of the brain will result.

The bones of the middle of the ear are three in number: the malleus, the incus and the stapes. The malleus is the most external of the ossicles and is in relation with the tympanic membrane. It consists of a head, neck, handle or manubrium, a slender or graceful process, and a short process. The head is situated in the ceiling of the tympanum, is rounded, and presents posteriorly a depression for articulation with the incus. Below the head is the neck, or constricted portion, and beneath this we have the three processes: the handle, or manubrium, which is the largest, slightly twisted upon itself and flattened, forms an obtuse angle with the head and is in contact with the middle and internal layer of the tympanic membrane. The tensor tympani muscle is inserted into the manubrium, near its junction with the neck. The

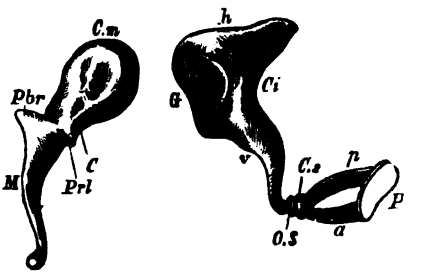


Figure 6.

THE AUDITORY OSSICLES (right).—*C. m.*, head; *C*, neck; *Pbr*, short process; *Prl*, long process; *M*, handle of the malleus; *Ci*, body of incus; *G*, articular surface; *h*, short, and *v*, long process of the incus; *O. S.* so-called lenticular or orbicular ossicle; *C. s*, head; *a*, anterior, and *p*, posterior limb of the stapes; *P*, plate or foot-piece of the stapes.

thin process, or processus gracilis, is long and projects nearly at right angles with the neck and extends downward into the Glaserian fissure. The short process is conical, passes from the base of the manubrium; its base is in contact with the tympanic membrane, and it receives the attachment of the external ligament of the malleus. The malleus is suspended in this cavity by a ligament which was formerly described as the laxator tympani muscle.

The incus, or anvil, is the middle bone of the three. It consists of a body deeply excavated for the reception of the head of the malleus, a short process projecting backwards, connected slightly with the posterior wall of the cavity of the tympanum by a ligament. The long process is directed downwards and inwards, is parallel

with the handle of the malleus and has attached to what was formerly described as a separate bone (os orbiculari) but which is now known as the orbicular tubercle which connects this process with the stapes. In early life this is supposed to be connected with the stapes by a capsular ligament, but later this is not found.

The stapes, the most internal of the three bones, is stirrup-shaped. Its head is directed horizontally outwards and is capped at its outer extremity by the os orbiculari, as it is sometimes known, or the orbicular tubercle. The base, or foot-piece, of the stirrup occupies the finestra ovalis, and is held in place by a ligament which retains it in its position and also helps to hold the membrane covering this opening. The two crura, or sides of the stirrup, join in one piece and form the neck of the bone. The neck is very short, and receives on its posterior border the tendon of the stapedius muscle. (See Fig. 4.)

You will observe that there have been only two muscles mentioned, the tensor tympani and the stapedius, which constitute the auditory muscles. These alter the position and tension of the membrana tympani, as well as the pressure of the lymph in the labyrinth. The origin of the tensor tympani muscle is from the apex of the under surface of the petrous portion of the temporal bone, and from the osseous groove above the Eustachian tube, has its tendon projected around the processus cochleariformis almost at right angles to it, and is inserted immediately above the axis of rotation of the malleus. (See Fig. 5.) When the muscle contracts, then the handle of the malleus pulls the membrana tympani inwards and tightens it. This necessarily causes movement of the incus and the stapes, which press deeply into the finestra ovalis. When the muscle is relaxed, the elasticity of the parts allows the membrane to return to its former position.

According to Müller, (1) the tense membrane offers great resistance to sympathetic vibrations when the sound-waves are very intense, and it is a physical fact that stretched membranes are more difficult to throw into sympathetic vibration the tenser they are. (2) The tension of the membrana tympani must vary according to the degree of contraction of the tensor. Thus the membrane, for the time being, has different fundamental tones, and is thereby capable of vibrating to the correspondingly high tone, it, as it were, being in a certain sense accommodated for.

If the mouth and nose are closed, and then the effort at expiration is made, as has been explained in the Valsalva method, the bulging out of the membrana tympani indicates the distension of

the tympanic cavity. The same effect is produced by forcible inspiration, whereby the air in the tympanic cavity is rarefied and the membrane is forced violently inward. In both of these instances the hearing is interfered with as long as the tension lasts. The tensor tympani muscle is excited reflexly, as, for instance, if air is blown into the external auditory canal, this muscle is brought into action. It is not directly and by itself under the control of the will.

L. Fick observed that when the jaws were firmly closed, he heard in his ear a piping or singing tone, while a capillary tube which was fixed air-tight into the meatus had a drop of water, which was in it, rapidly drawn inward. During this experiment a

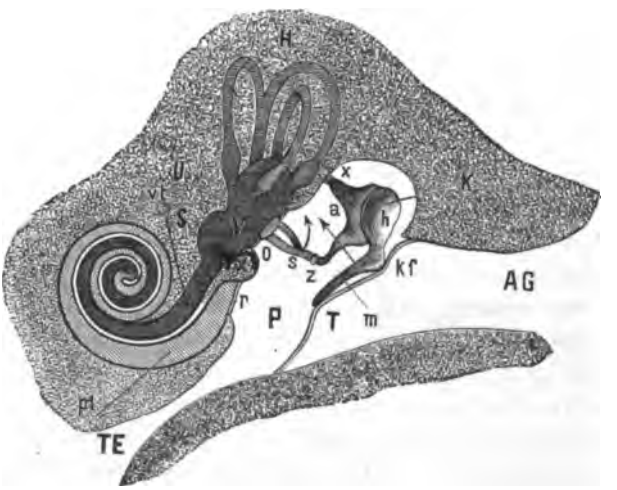


Figure 7.

SCHEME OF THE ORGAN OF HEARING.—*AG*, external auditory meatus; *T*, tympanic membrane; *K*, malleus with its head (*h*), short process (*kf*), and handle (*m*); *a*, incus, its short process (*x*), and its long process united to the stapes (*s*) by means of the os orbiculari so-called (*z*)|; *P*, middle ear; *o*, fenestra ovalis; *r*, fenestra, rotunda; *x* beginning of the lamina spiralis of the cochlea; *pt*, scala tympani, and *vt*, scala vestibuli; *V*, vestibule; *S*, saccule; *U*, utricle; *H*, semi-circular canals; *TE*, Eustachian tube. The long arrow indicates the line of traction of the tensor tympani; the short curved one, that of the stapedius.

person with normal hearing hears all musical tones as if they were louder, while all the highest non-musical tones are enfeebled.

The same function is observed when yawning; all sounds are heard in an enfeebled condition.

The stapedius muscle, as before indicated, arises within the pyramid and is inserted into the head of the stapes. When it draws upon the stapes, it must place the bone obliquely; thus the posterior

end of the plate of the stapes is pressed somewhat more deeply inward toward the finestra ovalis, while the anterior end is drawn outwards. The activity of this muscle prevents too intense shocks, which may be communicated through the stapes, from being conveyed to the perilymph.

The Internal Ear, or Labyrinth.—Time will not permit to make an elaborate description of this portion of the anatomy of the ear. I will, therefore, be as brief as possible. It consists of the osseous labyrinth divided into three parts: the vestibule, semi-circular canals and the cochlea, and is situated in the petrous portion of the temporal bone, nearer the base than the apex.

The vestibule is placed between the cochlea and the semicircular canals in juxtaposition to the inner wall of the tympanum. It is somewhat laterally compressed. The opening upon its outer wall is the finestra ovalis, in which is lodged the foot-piece of the stapes. In the inner wall is a depression, the fovea hemispherica, which has

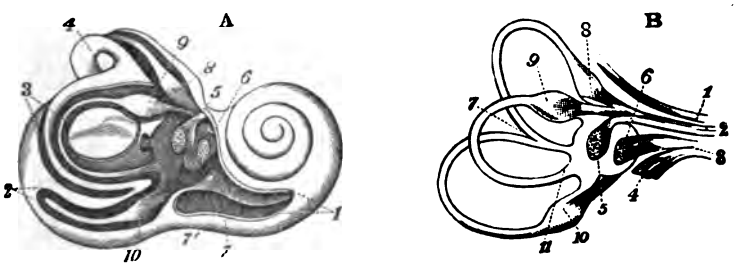


Figure 8.

A. THE INTERIOR OF THE RIGHT OSSEOUS LABYRINTH OPENED—SHOWING MEMBRANOUS IN PLACE.—1. Commencement of the spiral tube of the cochlea. 2. Posterior semi-circular canal partly opened, 3. Horizontal canal. 4. Superior canal. 5. Utricle. 6. Saccule. 7. Lamina spiralis. 7′. Scala tympani. 8. Ampulla of the superior membranous canal. 9. Of the horizontal. 10. Of the posterior canal.

B. MEMBRANOUS LABYRINTH AND NERVES DETACHED.—1. Facial nerve in the internal auditory meatus. 2. Anterior division of the auditory nerve, giving branches to 5, 8, and 9, the utricle and the ampullæ of the superior and horizontal canals. 3. Posterior division of the auditory nerve, giving branches to the saccule, 6, and posterior ampulla, 10, and cochlea, 4; 7, united part of the posterior and superior canals; 11, posterior extremity of the horizontal canal.

numerous perforations in it to allow the entrance of the filaments of the auditory nerve. Immediately behind this we have a crest, or eminence, the crysta vestibuli, which is in front of the aqueductus vestibuli. This contains the blind pouch which has come from the internal ear and is the only connection that the endolymph can possibly have with the fluid contained in the membranes of the

brain. The roof contains a second oval-shaped depression, the fovea hemi-elliptica. Behind the semi-circular canals open into the vestibule by five orifices.

In front we have the scala vestibuli of the cochlea opening into the vestibule. You will observe that the three semi-circular canals are placed above and behind the vestibule. The extremity of each

Figure 9.

EXTERNAL APPEARANCE OF THE OSSEOUS LABYRINTH.—Fenestra ovalis, cochlea to the left and (*f*) the upper, (*h*) horizontal, and (*s*) posterior semi-circular canal of the left side.

semi-circular canal has a dilated portion which is called the ampulla. Two of these open into one, thus making the five orifices of the semi-circular canal. The superior semi-circular canal is the highest; it is vertical and directed transversely, and directly beneath a smooth surface on the anterior part of the petrous portion of the temporal bone. The posterior semi-circular canal is the longest,

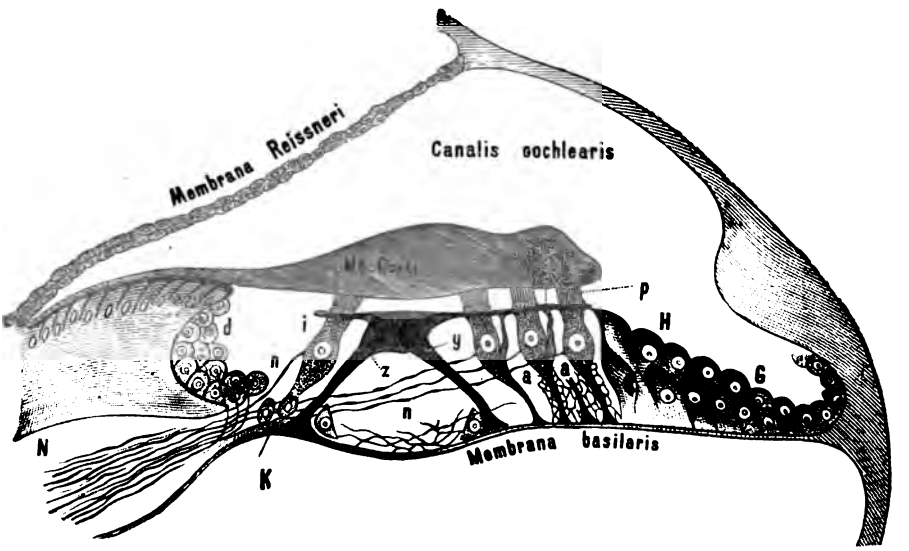


Figure 10.

SCHEME OF THE DUCTUS COCHLIACIS OR SCALA MEDIA.—*N*, cochlear nerve; *K*, inner, and *P*, outer hair cells; *n*, nerve cells terminating in *P*, *a*, *a*, supporting cells; *d*, cells in the sulcus spiralis; *z*, inner rod of Corti; *mb. Corti*, membrane of Corti or membrana tectoria; *o*, the membrana reticularis; *H*, *G*, cells filling up the space near the outer wall; *y*, outer rod of Corti; *i*, ganglionic cell.

is placed nearly vertical, and is directed backwards. The external semi-circular canal is horizontal and directed slightly upwards. The cochlea looks like a snail shell and consists of two and a half turns of bone horizontally placed immediately in front of the vestibule. Its base is on a level with the floor of the internal auditory meatus. Its base is directed upwards and outwards towards the front part of the interior wall of the tympanum. It is about a quarter of an inch in length, or 6 mm., and is the same width at its base. It has a central stem, or pillar, called the modiolus, around which the canal turns two and a half times, containing in the centre of this canal a spiral shelf, or plate, which is known as the lamina spiralis, and ends at the apex of the cochlea in a hook-like process, the hamulus, which surrounds a small opening called the helicotrema. The length of the spiral canal is about an inch and a half, or 3½ ctm. The lamina spiralis is dense and thin at its free margin, but is channeled and spongy by numerous canals for the transmission of the blood-vessels and nerves near the modiolus. In the recent state a membranous structure completes the bony partition between the two chambers, or scalae, of the cochlea. These are the scala vestibuli and the scala tympani. The scala vestibuli is the upper, and the scala tympani the lower of these canals, the former communicating with the labyrinth, and the latter with the tympanum by a membrane placed over the finestra rotunda; these to communicate at the apex of the cochlea by a small opening, already alluded to, the helicotrema. The scala vestibuli is divided again by a delicate membrane which arises near the outer part of the osseous lamina spiralis, and runs obliquely upwards and outwards to the outer wall, and is known as the membrane of Reissner. This forms a triangular canal, the scala media, whose floor is formed, for the most part, by the lamina spiralis, and on which we have the end organ of the cochlear nerve, or auditory nerve known as the organ of Corti. The most inferior portion of this scala media is blind, and connects with the saccule by a canal, the canalis reunieus. The base of the scala media is formed by a membrane extending from the lowermost portion of the osseous lamina spiralis to a projection on the inner part of the outer wall of the cochlea, known as the membrana basilaris, and upon this membrane we have placed the organ of Corti.

The vestibule, cochlea and semicircular canals are lined by a membrane, which membrane has placed between it and the bone a fluid known as the perilymph. (See Figure 8 *b*.) Inside this membrane we have a fluid known as the endolymph. This membranous

cast, so to speak, consists of the exact counterpart of the parts already named, and fitting into the fovea hemispherica and the fovea hemi-elliptica, we have the saccule and utricle.

The utricle is the larger, is in contact with the fovea hemi-elliptica, and has the filaments of the auditory nerve distributed to the wall of the sac passing through the bony foramina. The wall is often thicker here, and little particles of bony matter are found, which have been named otraliths, or ear-stones.

The saccule is lodged in the fovea hemispherica, receives numerous filaments of nerves through the foramina, and so communicates with the scalamedia of the semi-circular canals by the canalis reunieus.

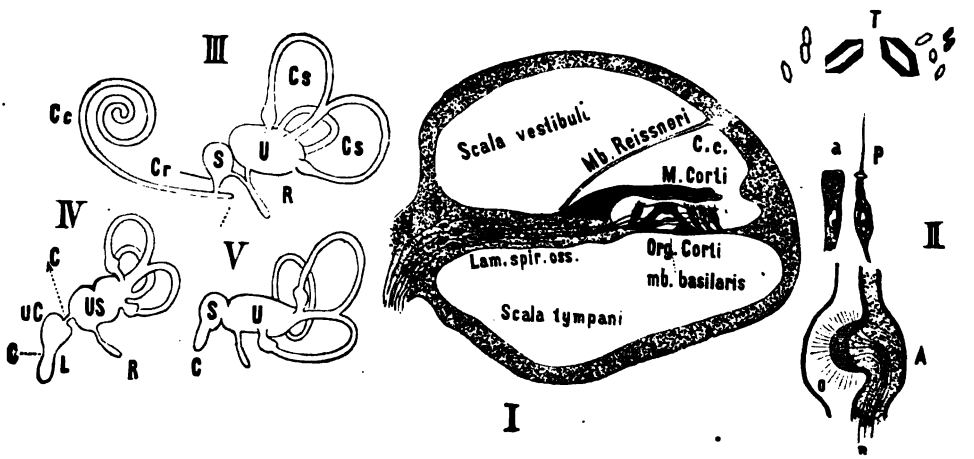


Figure 11.

I. Transverse section of the cochlea. *C. c.*, canalis cochlearis or scala media.

II. *A*, Ampulla of a semicircular canal with the crista accustica or hair-like prolongations of auditory *n* ; *a. p.*, auditory cells ; *p*, provided with a fine hair ; *T*, otoliths.

III. Scheme of the human labyrinth ; *c*, *s*, semicircular canals ; *u*, urtricle ; *s*, saccule ; *c r*, canalis reunieus ; *C c*, canalis cochlearis or scala media ; *R*, V-shaped canal placed in the aqueductus vestibuli leading to the dura-mater of the brain.

IV. Scheme of a bird's labyrinth.

V. Scheme of a fish's labyrinth.

The auditory nerve, with the facial nerve, enter by the internal auditory meatus on the posterior surface of the petrous portion of the temporal bone, and the auditory divides into two branches, a cochlear and a vestibular portion. The superior is the vestibular, and the inferior the cochlear portion. The vestibule passes through special openings to be distributed to the utricle, the ampullæ of the

superior and external semi-circular canals. The inferior division supplies the cochlea, passing up through the modiolus, then through the foramina at the base of the osseous lamina spiralis, and ends on the membrana basilaris in the organ of corti. It also sends a branch to the saccule, the filaments of which pass through the openings of the fovea hemispherica, and a long branch to the

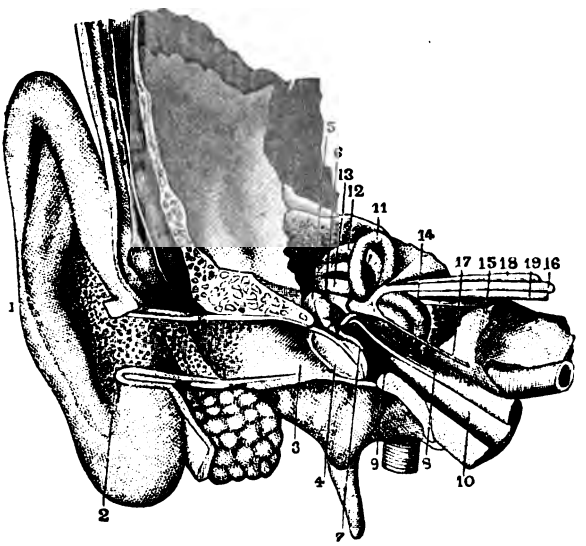


Figure 12.

SECTION SHOWING ORGANS OF HEARING.

1. Pima or auricle. 2. Conch with orifices of sebaceous and serumenous glands. 3. Osseous portion of external auditory canal. 4. External surfaces of the membrana tympani. 5. Anterior part of the incus. 6. Head of the malleus. 7. Handle of the malleus lodged between the internal and middle layers of the membrana tympani. 8. Tensor tympani m. with its tendon at a right angle to be attached at the inner margin of the base of the handle of the handle of the malleus. 9. Cavity of the tympanum. 10. Expanded portion of the Eustachian tubes. 11. Superior semi-circular canal. 12. Posterior semi-circular canal. 13. External semi-circular canal. 14. Cochlea. 15. The internal auditory canal where the wall has been taken away to show the nerves which it transmits. 16. Facial nerve. 17. The great superficial petrosal nerve passing from the geniculate ganglion of the facial toreach its destination. 18. Vestibular branch of the auditory nerve. 19. Cochelar branch of the auditory nerve.

posterior semi-circular canals, which it reaches by a special channel behind the foramina, which transmits the filaments to the saccule.

The highest number of vibrations that the ear is capable of perceiving is 40,960, and the lowest 16 to 23 vibrations per second. The breadth of the membrana basilaris increases from its base to its apex, and it is through this membrane that the ability to appreciate the fineness of sound is perceived. In a case recorded by Moos

and Steinbrugge, the patient heard only low notes in the right ear. After death it was found that the auditory nerve in the first turn of the cochlea was atrophied. Low notes are heard abnormally loud in cases of rheumatic facial paralysis, while high notes are heard abnormally loud in cases of loss of the membrana tympani, incus and malleus; the stapedius is in full action, whereby the highest tones are heard louder at the expense of the lower notes. Many persons with normal hearing hear a tone higher with one ear than the other.

Function.—The function of the semi-circular canals, as taken from numerous experiments, controls, in part at least, the co-ordination. It was found by Cyon that stimulation of the horizontal semi-circular canal was followed by horizontal nystagmus, of the posterior by vertical, and of the anterior by diagonal giddiness, stimulation of one auditory nerve being followed by rotating nystagmus, and rotation of the body of the animal on its axis toward the stimulated side. It is known also that giddiness occurs from certain nerve affections, as in Menière's disease, referable to the central nervous organs.

Wave-sounds are transmitted best by the skin covering the bones and the cartilages composing the external ear, as far as solids are concerned. The sound is also transmitted through the bone itself, but not so well as through the soft parts. (See Fig. 7.) The sound is most acutely perceived when it passes in through the external auditory canal impinging directly upon the membrana tympani, transmitted through the malleus to the incus, from the incus to the stapes, and by the stapes to the internal ear. Here it is perceived by the filaments which pass to the filaments of the auditory nerve, which are distributed to the cochlea and the semi-circular canals, the description of which has already been given.

LECTURE II—JULY 6, 1892.

THE ANATOMY AND PHYSIOLOGY OF THE PALATE, PHARYNX AND TONGUE.

The palate consists of two portions, a hard and a soft, or muscular part. The hard palate is placed anteriorly in the ceiling of the mouth, and consists of horizontal plates of bone from the upper maxillary and palatine bones. These join in the middle line, forming a longitudinal suture. The junction of the two palatine bones with the two maxillary bones forms another suture, crossing this at

right angles, at the junction of the posterior third of the hard palate with the middle third. It is bounded laterally by the internal plate of the pterygoid processes of the sphenoid and the alveolar processes of the maxillary bones. The palate is not absolutely horizontal, but differs in its contour with the age and sex of the individual, the child and female having a higher arch than the male. It is rough, shows numerous openings for the lodgment of glands, and at the posterior angles, presents

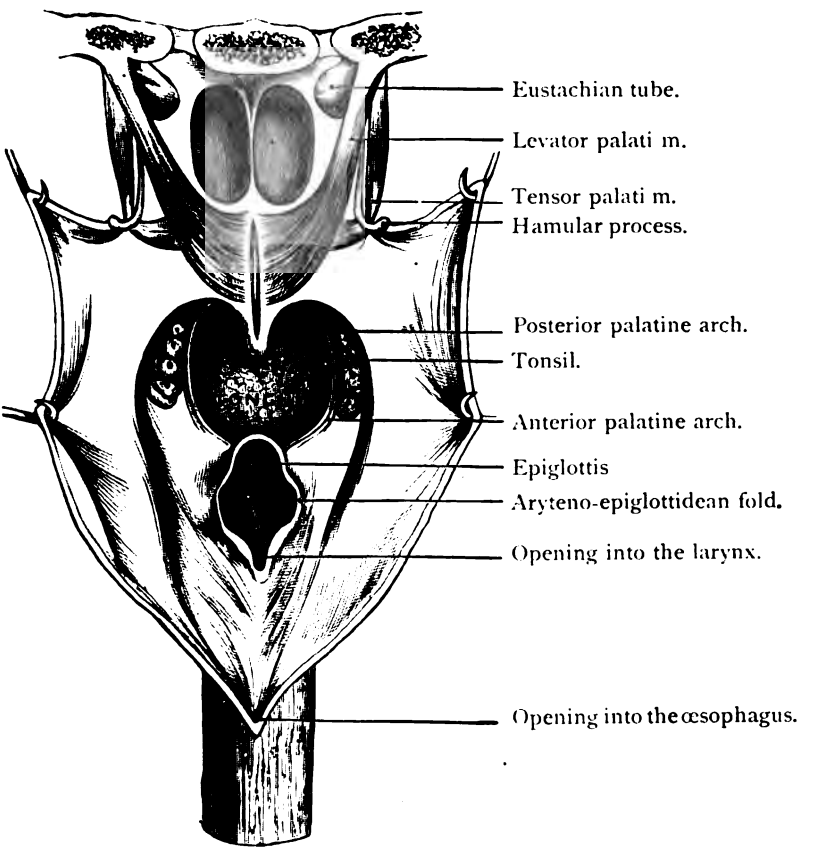


Figure 13.
PHARYNX OPENED POSTERIORLY (diagrammatic).

grooves for the lodgment of the palatine vessels and nerves. In juxtaposition to the hard palate posteriorly, we have the tuberosity of the palatine bone, surrounded internally by the internal ptyerygoid plate of the sphenoid bone, at the lowermost portion of which is a curved process, the hanular process, which plays an important part in the attachment of muscles of the soft palate.

The soft palate is attached to the posterior margin of the hard palate, and forms a movable prolongation backwards at the upper and back part of the mouth, partially separating this cavity from the nasal cavity above. Its sides blend with, or are merged into, the upper part of the pharynx. Its lower border is free, and has pendent in its centre the uvula. There are two folds which pass from the lateral aspect of the soft palate, one towards the front and the other towards the back, which contain muscles which pass down, the anterior ones to the tongue, and the posterior to the lateral aspect of the pharynx. These curved margins are called the anterior and posterior half arches. Between them we have placed a gland—the tonsil.

Muscles.—The anterior pillar, or half arch, is formed by the palato-glossus muscle. The posterior pillar, or half arch, is formed by the palato-pharyngeus muscle. The space between these arches is known as the isthmus of the fauces. The soft palate is composed of a thin, but dense aponeurosis, muscular tissue, blood-vessels and nerves covered by mucous membrane. The muscles are the tensor palati, the levator palati, and the azygos uvulae.

The tensor palati, arises from the scaphoid fossa, situated at the root of the internal pterygoid plate of the sphenoid and the outer side of the pharyngeal extremity of the Eustachian tube. It is inserted into the transverse ridge on the under surface of the horizontal plate of the palate bone and to the aponeurosis of the soft palate, joining with its fellow of the opposite side at this point. You will observe that to get to this position, it must pass around the hamular process of the internal pterygoid plate. Here it becomes tendinous, and a small sac, or bursa, is placed to prevent friction. The action of this muscle is to tense the palate and slightly open the Eustachian tube.

The levator palati arises from the anterior part of the rough surface at the apex of the petrous portion of the temporal bone. The muscle is rounded at its commencement and tendinous, then becomes fleshy, and is inserted into the aponeourosis of the soft palate at the posterior angle, some of the fibres being continuous into the azygos uvulae muscle upon the posterior or free margin of the palate. Its function is to raise the soft palate and bring it in contact with the posterior wall of the pharynx. When the muscle contracts it presses up and closes the orifice of the Eustachian tube. This action is, however, denied by some authorities, and a separate muscle, the salpingo pharyngeus, is described, to which I alluded in the lectures of last year.

The origin and insertion of the palato-glossus and palato-pharyngeus, together with their functions, have already been given, and I will not repeat them.

The azygos uvulæ arise from the arch of the soft palate and from the posterior nasal spine. They are inserted into the uvula and consist of two narrow strips of muscular tissue lying side by side. In making a dissection, these muscles look as if they were derived partly from the tensor and partly from the levator palati muscles. The mucous membrane covering the soft palate is continuous with that of the hard palate in front, and passing over the posterior margin is continuous with the nasal mucous membrane, and at the sides with the pharyngeal mucous membrane.

The tonsils are two small bodies 11 mm. (½ inch) in length, 8 mm. (⅓ inch) in width and thickness, and have about twelve or fifteen openings visible in the mouth. These are the orifices of numerous open follicles. The mucous membrane is continuous into and forms the lining membrane of these follicles, they being simply forms of the glandular apparatus. These organs vary

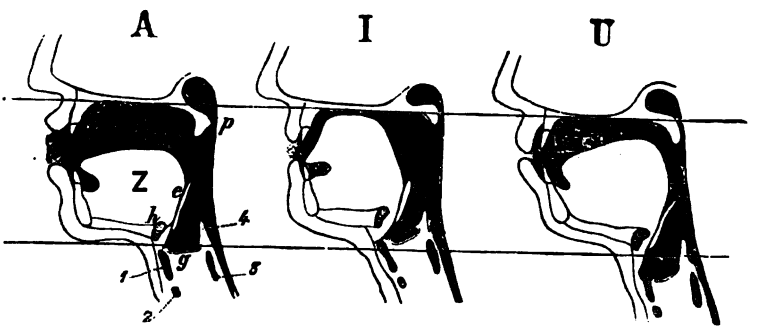


FIGURE 14.

SECTION OF THE PARTS CONCERNED IN PHONATION, with changes of position in producing A, I, U, *Z*, tongue ; *p*, soft palate ; *e*, epiglottis ; *g*, glottis ; *h*, hyoid bone ; 1, thyroid, 2, 3, cricoid, and 4, arytenoid cartilage.

greatly in size and are subject to hypertrophy, which when present, changes the character of the voice. The tonsil is in relation externally with the internal carotid artery, the superior constrictor of the pharynx, the ascending pharyngeal artery, its position corresponding to the angle of the lower jaw. The veins are situated on the outer part of the gland, and the nerve supply is derived from branches of the fifth and glosso-pharyngeal nerves. The lymphatics form a net-work which lies partially in the sub-mucous tissue and partially in the deeper layers.

Function.—It is generally admitted that all the vowel sounds are made by the vocal bands in the larynx; that all other parts above act as resonating cavities, or as obstructors to the volume of air to convert it into articulate speech. The palate plays an important part in this function, forming the roof of the mouth, its soft portion making a switch, so to speak, between the aural cavity and the nasal cavity, so that at the will of the individual, the sound may either pass through the aural cavity, or through the nasal cavity, or may go through both cavities. The shape of the aural cavity in the pronunciation of "a" is larger than in the production of any other vowel sound. The palate is not, in the production of this sound, open to its greatest extent. It is elevated higher in the production of the sound of "i," and occupies a mid position in the production of "u." The position taken by the uvula in the production of these non-nasal sounds is to the more completely shut off the nasal cavity. When, however, a portion of sound is to pass through the nasal cavity, the uvula is free, and will allow those guttural, vibratory sounds to be produced which are more apparent in the English pronunciation of "r," than in the Continental pronunciation of "r," where the tip of the tongue is more used than the back part of the aural cavity.

The Pharynx.—The pharynx is placed behind the nose and mouth, and extends from the base of the skull to the lower part of the crycoid cartilage, opposite the fifth cervical vertebra. The soft palate is placed in front, separating it from the nasal cavity, and from the aural, or buccal cavity below. The openings into the pharynx are, in front and above, the orifices of the posterior nares; below this, the mouth separated by the soft palate; at the sides and above the level of the soft palate, the orifices of the Eustachian tubes; while below and in the median line, the larynx and the œsophagus. Thus you will observe that there are seven openings into this cavity. Its length from above downwards is 11.3 ctm. (4½ inches), its greatest breadth from side to side being between the cornua of the hyoid bone, and its narrowest portion, where it passes into the œsophagus or food-track. The pharyngeal walls are composed of a fibrous coat, and a pharyngeal aponeurosis lined by mucous membrane, and is surrounded externally by muscular tissue. The pharyngeal aponeurosis is fibrous in its character, gives density to the walls, as well as a covering for the muscles immediately beneath. It is attached above to the back part of the body of the sphenoid bone, laterally to the apex of the *petrous portion of* the temporal bone, to the occipital bone, and to

the orifices of the Eustachian tube and the internal pterygoid plate of the sphenoid. The mucous membrane of the pharynx is continuous with that of the several cavities which open into it. It is adherent to the base of the skull, where it is thick and delicate and quite spongy. It thins out, however, as it approaches the posterior nares and Eustachian tubes. It is lined by columnar, ciliated epithelium, but it loses its ciliated character in its lower part. It has a number of lymphoid follicles scattered irregularly through it, but these are much thicker at the upper part, where they seem to form outlying portions of the large mass of lymphoid tissue which con-

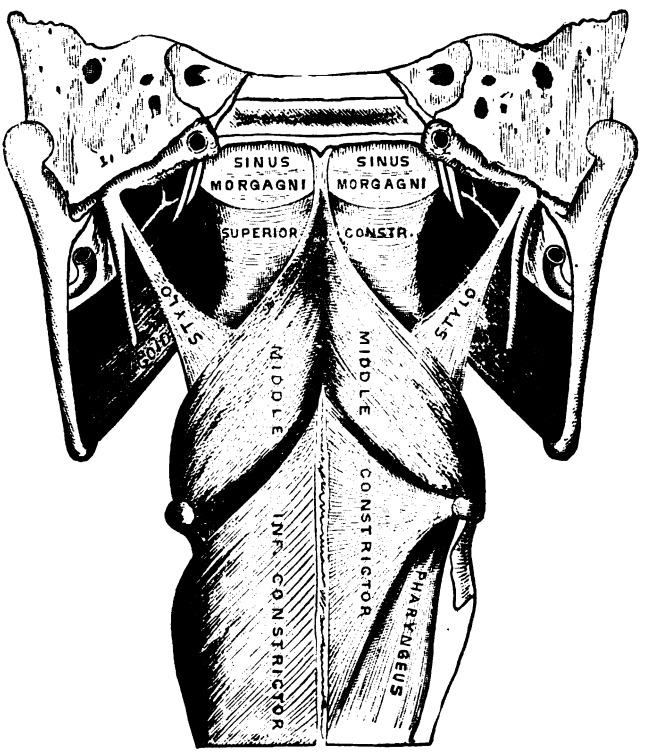


Figure 15.
PHARYX, POSTERIOR VIEW, SHOWING CONSTRICTOR MUSCLES.

stitutes the pharyngeal tonsil. This is exceedingly liable to become swollen and chronically inflamed, giving rise to naso-pharyngeal catarrh and occlusion of the orifices of the Eustachian tubes.

Muscles.—The muscular coat consists of three muscles, with two additional muscles derived from processes in the neighborhood; the stylo- and palato-pharyngei. The superior constrictor, quadrilateral in shape and quite thin and pale at its upper part, arises

from the lower third of the posterior edge of the internal pterygoid plate and its hamular process, from the pterygo-maxillary ligament, from the posterior part of the mylo-hyoid ridge of the lower jaw, and some fibres from the side of the tongue. The fibres pass backwards, slightly expanding, and are inserted in the middle line to a raphe which extends from the pharyngeal spine on the under surface of the basilar process of the occipital bone,

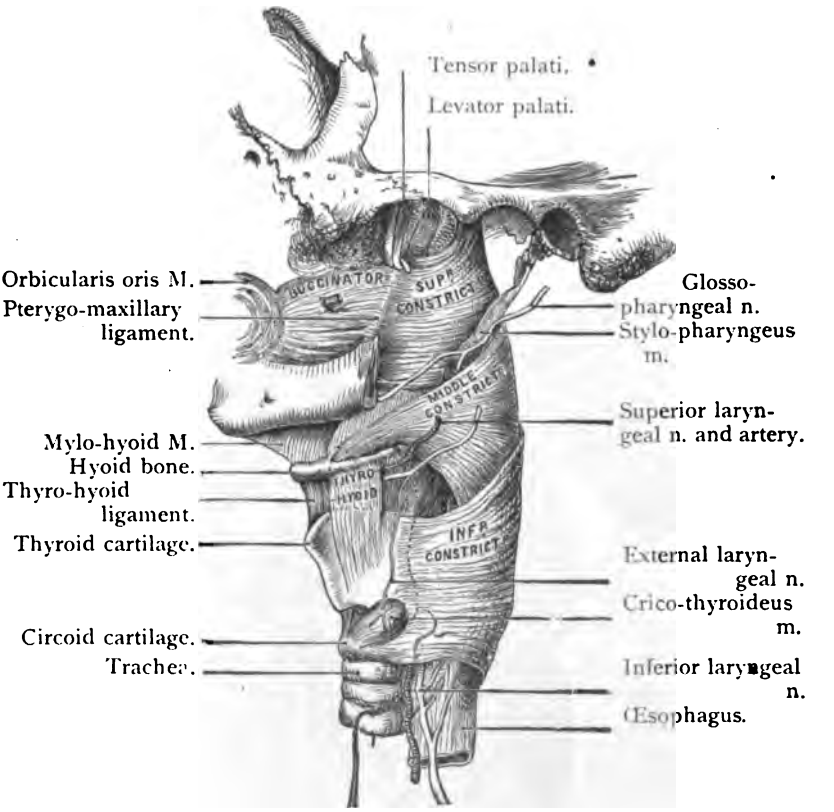


Figure 16.

SIDE VIEW OF THE MUSCLES OF THE PHARYNX.

downwards as far as the œsophagus. The Eustachian tube and the levator palati are placed above the superior arched border of this muscle. The space between this border and the under surface of the basilar process of the occipital bone is devoid of muscle, but is strengthened by the continuation of the aponeurosis from the muscular fibre upwards to the bone above. The middle constrictor is fan-shaped, arises from the whole length of the greater cornu of the hyoid bone and the stylo-hyoid ligament. The fibres

diverge, and are inserted into the median raphe posteriorly, blending with those of the opposite side. The lower fibres of the muscle descend beneath the inferior constrictor; the upper overlap the superior constrictor, and oftentimes reach as far up as the basilar process of the occipital bone. The middle fibres run transversely. The inferior constrictor, thick and strong, arises from the thyroid and the inferior cornu of the crycoid cartilage behind the crycothyroid muscle. The fibres extend backwards and inwards, the lowermost horizontal. The upper ones ascend obliquely, passing over the lower margin of the inferior constrictor, joining with its fellow of the opposite side in the median raphe behind. The stylopharyngeus arises from the base of the styloid process internally, and passes downwards to reach the pharynx beneath the muscular layer to the mucous membrane, joining with the fibres of the palatopharyngeus, and finally to be inserted into the border of the thyroid cartilage. The palato pharyngeus arises from the aponeurosis of the soft palate by two heads, which are separated by the insertion of the levator palati, one or two narrow bundles from the lower part of the cartilage of the Eustachian tube, these latter bundles form the Eustachian tube, being called the salpingo pharyngeus. It is inserted by a narrow, thin fasciculus into the posterior border of the thyroid cartilage, near the base of the superior cornu, and by a broad expansion into the fibrous layer of the pharynx at its lower part. It approximates the pillars of the fauces, depresses the soft palate and elevates the pharynx. The muscular movements of the pharynx are those provided for by the three constrictor muscles, which practically constitute one muscle divided into three portions. They seem to be arranged in a manner to give the most vigorous constrictor action, together with a firm support to the pharyngeal wall, which is still secured in the muscular layers overlapping each other between each of their divisions. Used as a sounding-board it enables the air to pass upwards through its cavity. If, on the contrary, it is used as a passage for food, the lower portion of the pharynx has greater muscular power, and, consequently, forces that which comes in the embrace of the inferior constrictor immediately down into the œsophagus, rendering the upper portion freer to allow air to pass to the larnyx. There seems to be formed, in some instances, along the lateral wall of the pharynx, a curve forward, covered by mucous membrane, to the origin of the palato pharyngeus muscle. This fold is known as the plica salpingo-phanyngea. It seems to be part of the palato-pharyngeus muscle, which has the connection with the lower part of the Eustachian tube, as already

described. This fold is very readily seen in those persons suffering from cleft palate, for in these individuals where the cleft is both in the soft and hard palate, the under surface of the base of the skull can be seen. The action of this salpingo pharyngeus, forming this plico salpingo pharyngeus, is readily seen when the superior constrictor muscle is brought into action, in the effort to close the upper part of the pharynx to produce the sound of "a." This plica salpingo pharyngeus comes in contact with the lateral and posterior margins of the soft palate, the uvula fitting into the centre of the pharynx, which, at this point, is practically almost immovable, and prevents the sound from passing through the nasal cavity when such apposition takes place, as I have observed in a man of twenty, where there was a double hair-lip, double cleft hard and soft palate.

Nerves.—The nervous supply to the pharynx is through the pharyngeal plexus of the sympathetic and the glosso-pharyngeal nerves. Its mucous membrane is supplied with general sensation, and the constrictor muscles with motion, the lower constrictor receiving additional innervation from the external laryngeal nerve.

Arteries.—The blood supply is derived from the ascending pharyngeal of the external carotid, terminal branches of the internal maxillary, the vidian, descending palatine, and the superior pharyngeal from the facial, the ascending palatine, and the tonsillar, and a few twigs from the thyroid arteries. The veins form a dense network on the fibrous layer; those on the lateral wall of the pharynx empty into the facial vein, while those on the upper part empty into the internal jugular, or the inferior petrosal sinus.

Physiology of the Fauces.—I will not go, upon this occasion, into the part that the pharynx plays in deglutition, but will confine my remarks to the action that these parts take in the production of articulation. The column of air emerging from the lungs is thrown into vibrations by the vocal bands, thereby producing sound-waves. These are converted into articular language by the soft palate, tongue, cheeks and lips. The palate, for the most part, seems to act as already described, as a switch, turning the sound-wave, at the will of the individual, into the nasal or the aural cavity, or allowing it to pass through both. Timbre is the peculiar quality, or clang, which depends upon the shape of all the cavities connected with the larynx. Of all the cavities in the production of articulate speech, the aural cavity is the only one that has the peculiarity of changing its fundamental tone; by that I mean the vibration, or

tone, to which that cavity will resound when a tuning-fork is placed in front of it, or you can obtain the fundamental tone of this cavity in its varied positions by holding the mouth open, changing the position of the tongue, and at the same time tapping the side of the cheek.

For the anatomy of the tongue the reader is referred to the volume of " Report of the Proceedings of the First Summer Meeting," pages 116, 118.

There are certain vowels that are not pronounced with a nasal twang. These are " a " and " i." The difficulty when attempting to produce these vowels in conjunction with nasality, is because when " i " is sounded, the mouth is so narrow that when the passage to the nose is open, the air passes almost completely through the latter, whilst the small amount passing through the mouth scarcely suffices to produce a sound. According to Wheatstone and Von Helmholtz, if the vowels are sounded in an audible tone, that is along with the sound from the larynx, the fundamental tone of the vocal cavity strengthens in a characteristic manner the corresponding partial tones present in the laryngeal sound. From what has preceded, you will observe that the consonant sounds are not produced by the larynx, but are noises which are produced in certain parts of the resonance chamber.

Time will not permit me to give you an extended description of the mechanism of the aural and nasal cavities in the production of the various vowels and consonants. I will therefore have to refer you to the very excellent work of Landois and Stirling on " Human Physiology " (Fourth edition), for a more extended description of this part.

There are certain pathological variations in the voice and speech which might be of interest. According to Gerhardt, if one of the vocal bands is paralyzed, the voice becomes impure and falsetto-like. It may be possible to feel the vibration in the larynx only upon one side, under such conditions. According to Turck and Schintzler, in the production of a double sound, or diphthongia, the double tone occurs because the vocal bands touch at some point of their course, the glottis being, under such circumstances, divided into two unequal portions, each producing its own sound. Ordinary hoarseness may be caused by a roughness, swelling, or laceration of the mucous membrane, or vocal bands, when if these cords touch one another in the act of speaking, the voice cracks, or speech is broken. Disease of the pharynx, naso-pharynx and the uvula will also produce changes in the voice of a reflex character. Paralysis

of the soft palate, as well as fissure of the soft palate, or cleft in the hard and soft palate together, cause a nasal timbre to all vowel sounds. Paralysis rendering difficult the normal formation of consonants, the resonance is imperfect, while the explosives are irregular, owing to the air escaping through the nose. Paralysis of the tongue weakens "i," and "e" and "a" are less easily produced. In paralysis of the lips, as in facial paralysis (Bell's palsy), the articulation of the consonants of the first position must be interfered with. When the nose is closed, under such circumstances, the speech has a characteristic sound.

LECTURE III—AFTERNOON, JULY 6, 1892.

Refer to the Report of the Proceedings of the First Summer Meeting, pages 49–63.

LECTURE IV—JULY 7, 1892.

PHYSIOLOGY OF HEARING.

In persons of normal hearing the sound-wave is transmitted through the external auditory canal to the tympanum. This being set in motion, causes the handle of the malleus to vibrate, producing a like motion in the long process of the incus, which is in turn transmitted to the stapes, and by the stapes to the perilymph in the internal ear, through the perilymph to the membranous labyrinth, and finally to the endolymph contained in the membranous labyrinth, to the filaments of the auditory nerve. The auditory nerve being irritated, transmits the sensation to the brain.

The *mechanism* of the three portions, namely, the external, the middle, and the internal ear, I will now take up. The conduction of the sound to the membrana tympani by the external ear and auditory canal is transmitted in four ways; most directly by the vibration of the air in the external auditory canal; next through the cartilaginous walls of the external ear and pinna; third, by the resonance of the column of air; and, fourth, by the vibrations transmitted to it through the bones of the skull. To differentiate between trouble in the external auditory canal and trouble in the internal ear, and to show the more direct transmission of sound, if a tuning-fork is struck and placed between the teeth and held until all appreciable sound is lost, the ear being previously stopped with cotton: if, now, the tuning-fork is taken from the

mouth and held opposite the external canal (the cotton being removed) some vibrations may still be heard. However, if some obstruction has taken place in the external auditory canal and the hearing be impaired, if a resounding body is placed in contact with the cartilage, it may be appreciated. It may be inferred, therefore, that if in a deaf person the conduction is still normal through the cranial bones, then the cause of deafness is not in the nervous part of the ear, but in the external sound-conducting part of the apparatus.

The *middle* ear, as I have already alluded to, is lined by the same mucous membrane as that lining the pharynx. This membrane surrounds the inner surface of the tympanum and the ear bones, and is continued into the pharynx through the Eustachian tube. The bones, as I have indicated, are suspended in the tympanum by ligaments which allow rotation to take place around a common axis, drawn from the processus gracilis of the malleus to the short process of the incus. Rotation of both ossicles around this axis occurs in a plane vertical to the plane of the membrana tympani. During rotation the head of the malleus and the upper part of the incus take directly the opposite direction to the parts lying below, namely, the handle of the malleus and the long process of the incus. The movement of the handle of the malleus must therefore follow the membrana tympani, and *vice versa*, while the movement of the stapes is connected with the movement of the long process of the incus. It must not be forgotten, however, that the long process of the malleus is two-thirds longer than the incus. The excursion, therefore, of the incus, however slight, would increase the action of the malleus, and conversely, increased action of the stapes, through this process of the incus, would increase the action of the handle of the malleus. The vibration of the membrana tympani inward causes a less extensive, but a more powerful movement of the foot of the stapes against the perilymph of the labyrinth. As the cavity of the tympanum is lodged in solid bone, and the ossicles can move in this cavity by means of their ligaments and muscles, the vibrations of the membrana tympani are directly transmitted to the perilymph of the labyrinth. The membrana tympani is nearly thirty times larger than the finestra ovalis, the relation in the size being represented by a funnel. The length of the handle of the malleolar lever is 9½ mm.; the length of the short, or stapedial arm, through the long process of the incus, is 6½ mm.; so that the latter moves less than the former, but what is lost in extent is gained in force.

I have spoken of the action of the tensor tympani and the stapedius muscles, and will not again allude to them.

Pathological Conditions.—As the membrani tympani is covered by two layers, derived from the skin and the mucuous membrane, the outer one connected with the skin of the external auditory canal, and the inner one continuous with the lining membrane of the tympanum, and as these parts are particularly affected by eruptive diseases, inflammation may be set up in the cavity of the tympanum, which, if not relieved, will go from a catarrhal condition to death of the ossicles, causing perforation of the membrane, anchylosis of the bones, effusions of inflammatory material in the cavity of the tympanum, between the layers of the membrana tympani, and finally, an effusion of pus in this cavity. As, however, you do not usually see the cases when the early symptoms of trouble are present, I will merely call your attention to some of the important measures for the relief of deafness caused by this inflammatory action.

Hearing is interfered with in thickening and perforation of the membrana tympani. When disease has gone so far as to cause anchylosis of the bones, this may be partially restored by exercise of the membrana tympani. When death of the bones has taken place, the membrana tympani must be entirely removed with the malleus and incus, and the hearing will again be restored, as has occurred in cases reported by Dr. Burnett, of Philadelphia, Dr. Sexton, of New York, and others. In these cases the stapes is not interfered with.

Physiology of the Internal Ear.—The vibrations of the foot of the stapes in the finestra ovalis give rise to waves in the perilymph within the osseous labyrinth. The perilymph, in turn, transmits these waves to the membranous labyrinth. They are then transmitted to the endolymph lying in the saccule and utricle, and these communicate anteriorly with the cochlea and posteriorly with the semi-circular canals. We have practically, then a sound-conducting apparatus, as well as a sound-perceiving apparatus. In the former we have the outer ear and external meatus, the middle ear with its contents and the parts that open into it. The latter consists of the internal ear, the expansion of the auditory nerve in the labyrinth, the nerve and the sound perceiving and interpreting centres in the brain. The functions of the semi-circular canals seem to preside over co-ordination, and the collection of sonorous undulations from the bones of the cranium. The cochlea seems to have been constructed for the reception and spreading out of the nerve fibres

of the auditory nerve over a wide extent of surface. In the cochlea we have to do with a series of apparatus adapted for performing sympathetic vibrations with wonderful exactness. We have here what might be called a musical instrument, which is designed, not to produce sounds, but to render them perceptible, and which is similar in construction to artificial musical instruments, but which far surpasses them in delicacy, as well as in the simplicity of its execution. Hence it is that the organ of Corti has been likened to the keys of a piano; but while in a piano every string must have a separate hammer, by means of which certain sound is produced, the ear possesses a single hammer of an ingenious form in its ear bones, which can make every string of the organ of Corti sound separately. There are three thousand rods of Corti in the human ear. This would give about four hundred to each of the seven octaves which the human ear can appreciate. Thus we have about thirty-two for each semitone. According to Weber, an accomplished musician can appreciate the one-sixty-fourth of a tone. Every normal ear is able to distinguish musical tones from noises. It is possible, by means of this portion of the ear, to determine that different tones have a different pitch; thus, as in the minor chord and in the major chord. The lowest note that the ear can perceive is from sixteen to thirty-two vibrations per second; the highest note forty thousand nine hundred and sixty vibrations per second. It is rare, however, to find these high tones perceptible over thirty-five thousand vibrations per second. When the tensor tympani is contracted, the perception may be increased for tones three thousand to five thousand vibrations higher, but very rarely. Perception of high tones may be abnormally acute. Under such circumstances the tension of the sound-conducting apparatus is much increased.

School of Practice.

First Year Class from the Clarke Institution, Northampton.

Class from the Grammar Department of the Horace Mann School, Boston.

Sixth Grade Class from the Pennsylvania Institution, Philadelphia.

Answers to Questions.

Appendix.

SCHOOL OF PRACTICE.

WEDNESDAY AFTERNOON, JUNE 29.

MISS YALE: LADIES AND GENTLEMEN: May we be allowed a few words of explanation in regard to the work of the Practice School, so called. *First:* Its purpose is to show methods of instruction; that, in order to do this, it is necessary to show results, we grant, but that is not our purpose. Our teachers have not brought pupils here to give daily exhibitions; they have brought them here to illustrate methods of work. It is especially necessary that this be kept in mind, as, often, step after step will be passed over rapidly, simply to indicate the order of work. A single point more fully illustrated would make a better exhibition, but would not be so practically helpful as the development of a method. Had we ten months instead of ten days, we might do new work each day—actually teach new principles, but all work of this sort has in it a large time element. We do not attempt in our own schoolrooms to teach all the sounds of the English language and the difficult combinations of them in a few minutes per day during ten days. We certainly cannot do more here than there. We must bring here pupils having actually accomplished a certain grade of work that their knowledge may balance this time element which we cannot bring. We can then pass rapidly over the steps with which the pupils have already become familiar, by this means clearly setting forth the steps in the process of development.

In accordance with this theory we have classes to occupy fifteen minutes per day. The first is a class at the close of ten months' instruction. With this class each day's exercises will cover a period of a little over a month. (The ten months' record of the teacher's note book must be reviewed in eight days.) The other classes will show later years' work. From the Philadelphia school and the Horace Mann School we shall have the work of higher grades shown through several days in succession.

A few minutes each afternoon will be given to the answering of questions. These questions have been gathered from different schools, and we have endeavored by sending them out in advance to secure at least one or two answers to each question. We shall be grateful for answers or remarks, or additional questions.

In order to make quite certain that we have the best wine last, the last hour of the afternoon—originally assigned to practice work—has been given to Dr. Bell for a lesson in Visible Speech.

FIRST YEAR CLASS FROM THE CLARKE INSTITUTION.

MISS YALE: This class consists of three congenitally deaf children. They entered school in September last, at eight, nine, and ten years of age. Neither child had received previous instruction. These pupils have been members of an entering class of twenty-two pupils, taught most of the year in two divisions. The two teachers, Miss June Yale and Miss Gawith, who have taught these divisions, have consented, at the request of some of our friends, to go rapidly over the work of the year. The first month's work which will be hastily reviewed to-day will consist of exercises planned to develop attention, observation, and imitation. We do not speak of the work as kindergarten work, though some of the exercises are kindergarten exercises adapted to the use of the deaf. We have adopted this plan of introductory work, because we have found that by so doing we could secure at the close of the year a greater knowledge and use of language and speech than by any other plan we have tried.

[At this point the class was brought forward.]

MISS YALE: Gymnastics.

[Simple movement of the hands and arms, walking and running, the pupils watching the teacher and imitating her movements.*]

MISS YALE: Color.

[Matching colors in wool, silk, paper, splints, etc.]

MISS YALE: Splint laying.

[Pupils followed the teacher in laying simple designs which were reproduced on the black-board with colored crayons.]

MISS YALE: Form, recognized by sight.

MISS YALE: Gymnastics of the face.

[Opening and shutting the eyes and mouth. Lip positions for vowels, as *ah*, *au*, *oo*, etc.]

MISS YALE: Diagram.

[Outline of pupil's profile on the black-board. The pupils pointed to different parts—eye, nose, mouth, etc.]

MISS YALE: Pictures.

[Matching pictures of similar design.]

* By request a full description of these exercises has been written and may be found in the "Appendix."

MISS YALE: We will take up this afternoon with our little class, the outline of the second month's work. The first is simply a lip reading exercise.

MISS JUNE YALE: Come, run, jump, etc.; ball, cart, etc.

MISS YALE: In giving these elements to-day we do not stop to develop them, but simply to indicate the order in which they were taught.

[Sixteen of the elementary English sounds were given.]

MISS YALE: In regard to these children's voices, two of them were as disagreeable voices last September as we have ever had. This child's voice (Louise's) was one of the highest and most disagreeable; this one's (Goldie's) was very low, but hardly less disagreeable; this little girl's voice (Bella's) was not especially disagreeable.

MISS YALE: These are consonant combinations.

[*fp*, *thp*, *sp*, etc.]

MISS YALE: In a few words I wish to explain the purpose of these exercises, beginning with work on form. We have felt for the last few years that greater cultivation of the sense of touch might aid in securing sounds whose positions were not visible, and that the perception of vibration might modify disagreeable voices. We have therefore planned a series of exercises, beginning with these geometrical solids and going down through successive steps until we come to the perception of vibration itself.

[Pupils selected by touch alone a number of small geometrical solids.]

MISS YALE: The forms which were recognized yesterday by sight, are to be recognized to-day by touch.

MISS YALE: This is recognition of length by touch. The little girl measures the object with her fingers. These balls are of unequal weight, though of very nearly the same size and color. The child will indicate which is the heavier.

[Sticks, pencils, balls.]

MISS YALE: They will recognize the number of spots shown on the number block and show the same with the cubes.

MISS YALE: This is work on the face diagram.

[Pupils compared parts of the face with the parts of a manikin's face and then with an outline drawing on the blackboard.]

MISS YALE: This is net-work drawing on the ordinary kindergarten slates. Simple designs are given at first. Later they are often reproduced from memory.

MISS YALE: We have reviewed the first and second month's exercises of this class; to-day we shall review the work for the third month.

This is an exercise in tongue gymnastics in advance of that given in yesterday's work. The positions are more definite and exact than those taken previously.

[Exercises taken from Guttmann's "Gymnastics of the Voice."]

Several questions having been asked as to the reason for the strange *position* of these sounds on the blackboard yesterday, I will explain: We are building up a chart which will stand when completed, like this (printed chart shown; see "Appendix.") We propose that these written charts shall be the measure of work done. The *order* in which these sounds were given yesterday was the order in which they are usually taught.

[Elementary sounds were given and written on the blackboard to form a chart.]

MISS YALE: This is an exercise in articulation.

[Elementary sounds were given.]

MISS YALE: This exercise consists in reading combinations from the lips, repeating them and writing them.

[*Shoot, tot, farm, boat*, etc.]

MISS YALE: They will write these phonetically.

DR. NOYES: Do you see any objections to giving the meaning of the words at the same time?

MISS YALE: We do not wish to spend time to do that at this point. We find that we have accomplished more language work by the end of the year by getting the pupils ready through this preparatory work, by making it possible for them to read from the lips quickly and easily, and pronounce words readily when given to them.

MISS YALE: This work is done by touch. These are geometrical forms and surfaces alike in all respects except outline. The single form is given; the child feels the outline and then finds the same figure among those upon this board. Yesterday we spoke of this exercise as one for the cultivation of touch, intended, in the end to develop perception of vibrations.

The *texture* of these fabrics varies, although alike in color. They are made of fine and coarse wool, silk and satin. Their position on the hoop is not a guide to the child for the reason that they are moved about frequently.

[An exercise in distinguishing by touch materials of different texture. The pieces of cloth being fastened to a hoop they could be felt of between the fingers.]

MISS YALE: These cloths are plush, satin and silk. The pupil cannot take the materials between the fingers as before. She feels only the *surface*.

[For this exercise the materials are pasted on a card and the surface distinguished by touch.]

MISS YALE: The size and character of these strings the child must determine solely by touch. They are loosely twisted cords, closely twisted ones, fine wire, gut, and thread. One of these single strings being given the child he finds its duplicate among the strings on the board.

Before using this guitar we use other stringed instruments. We also use the piano. The child puts her hand upon the bridge, and tells by the vibration which string was struck. We have not tried intermediate tones much; some of them take one intermediate tone, and all can distinguish the difference of an octave on the piano.

MR. ELMENDORF: Have they been shown that certain strings produce certain vibrations, heavy or otherwise, according to the string vibrated?

MISS YALE: They have been shown which string was struck when they felt a certain vibration, and after that they determine which string is struck by touch alone.

MR. ELMENDORF: Then this simply gives them practice in distinguishing between slow or coarse and rapid or fine vibration.

MISS YALE: Yes.

MISS YALE: We give all simple directions by lip reading from the first. The children learn to recognize names of objects and of actions in this way before they attempt to speak the same words.

MISS JUNE YALE: (To the class.)

Give me a book.
Give me a ball.
Give me a box.
Give me a dog.
Give me a basket.
Jump.
Walk.
Give me a cat.

MISS YALE: Our reason for not allowing the children to speak during these early afternoons of this week is that we are attempting to show a method, not results in any sense, and we wish to keep that point before you constantly. This day represents the work of a certain month, and at that period these children were not speaking these words.

MISS JUNE YALE: (To the class.)

Sit down.

Clap your hands.

Give me a top.

Give me a ball.

Run.

Walk.

Jump.

Hop.

MISS YALE: We will go on with the work on the same diagram that was used yesterday.

[Teacher represented on an outline drawing different positions of the vocal organs and the children assumed them.] Lips shut, point of tongue shut, etc.

MR. KIRKHUFF: Will you please tell us what they are saying?

MISS YALE: They are simply taking positions indicated in the diagram.

DR. NOYES: How long do you pursue this method before they begin to take up the knowledge of words and the meaning of words?

MISS YALE: They have had the meaning of words from the lips from the outset. We usually begin giving them language about the holidays. Some classes complete this preparatory work sooner than that; others a little later.

MR. RAY: How many do you usually put into a class?

MISS YALE: There were eleven in this class until the middle of the year, then the class was reduced to eight.

SATURDAY AFTERNOON, JULY 2.

MISS YALE: This afternoon we will begin our work with exercises of the fourth month of our school year.

This is work on vibration. The child closes its eyes, then opens them and points to the string, the vibration of which she felt.

[Zithern was used.]

MISS YALE: The figure "2" over *ow* ($\frac{2}{ow}$) distinguishes this from the other sound of the same letters.

[The remaining elementary sounds were given and the spellings which represent them. See printed charts in the "Appendix."]

MISS YALE: Reading combinations and writing them.

[*Mark*, *star*, *box*, *cart*, etc.]

DR. BELL: What have you there? I observe the child in the middle made mistakes several times. Were the combinations all the same to her eye?

MISS GAWITH: Yes, she wrote and then I told her "*no*" because I wanted her to reason that if it was not *p* or *b*, it must be *m*.

[The combination *mark* was given.]

DR. BELL: Now, what did she write there?

MISS GAWITH: Gart—she should have written *cart*.

DR. NOYES: Are those new words to them?

MISS GAWITH: Some are not and some are.

MISS YALE: They are not words to the pupils, only combinations; they do not expect words at this time.

MR. CROUTER: Are those combinations entirely new to them?

MISS GAWITH: Some are and some are not.

MISS YALE: Further work on the diagram.

[Positions for simple elementary sounds shown on the diagram and read by the children.]

TUESDAY AFTERNOON, JULY 5.

MISS YALE: The work of this little class to-day covers the month of January and a part of February.

An exercise in vibration, using three strings, three tones, instead of two, as on previous days.

[A guitar was used.]

THE PRESIDENT: Which is the one she has difficulty with?

MISS GAWITH: The lowest.

MISS YALE: Work on the diagram as before.

[Positions for the more difficult elementary sounds were represented by the teacher and read by the children.]

MISS YALE: Action work.

[I ran.	A girl threw a ball.
I fell.	A girl ate some candy.
You wrote.	A girl wrote a letter.]

MISS YALE: We are accustomed to teach print very early in the year. This is the first time that we have used the chart with the printed characters on it.

[Printed chart of elements was used. Words were read from print.]

MISS YALE: Exercises in lip-reading.

MISS GAWITH: [Put on your hat. Brush your hair. Give me a book, etc]

WEDNESDAY AFTERNOON, JULY 6.

MISS YALE: Our first work is with the little class we have had for several successive days.

Work on vibration; comparison of tones.

[The teacher gave a low tone, the child feeling the vibration in her throat, repeated it and found a string on the guitar which would produce a low note.]

MISS YALE: This is the beginning of question work.

[Simple questions about different objects were asked.]

MR. CROUTER: I should like to inquire if the work of the first year in your school will be published in full in the proceedings of this meeting.

MISS YALE: It was not intended to publish more than the work that is done here, as indicating the order of work.

MR. CROUTER: Will you include the whole year's work of the class?

MISS YALE: We have not expected to.

MR. CROUTER: I think it would be very helpful to teachers throughout the country, if a very full outline of the work, including manuscript lessons of your school during the first year, could be published in the proceedings of this meeting. (Applause).

THURSDAY AFTERNOON, JULY 7.

MISS YALE: The first exercise this afternoon will be by the little class which has been before us each day.

Vibration work.

[Child with a very low voice raised it by trying to produce the same vibration as that felt by her in the teacher's throat when a high tone was given.]

Q. Do you love mamma?

A. Yes, I love mamma.

Q. Do you want some water?
A. Yes, I want some water.
Q. Do you see a cat?
A. Yes, I see a cat.
Q. Do you like pie?
A. Yes, I like pie.

MISS YALE: Articulation.

[*Ped-pt, ked-kt, hopped, walked, looked* were written on the board; these were repeated by the pupils. Final *b, d, g* were repeated by the class as *bp, dt, gk.* Words illustrating different spellings of *o-e* were written. The first child reading from the teacher's lips wrote *rope, boat, no,* and *know*; the second wrote *stone, goat, go,* and *snow.* Words containing different spellings of *ee.* The first child wrote *sheep, me, beans.*]

MISS YALE.—Work on pronouns and verbs.

MISS GAWITH: Put the pencil into your pocket.
Q. What did you do?
A. I put the pencil into my pocket.
Q. Tell Louise what she did.
A. (Goldie:) You put the pencil into your pocket.
Q. What did Louise do?
A. (Bella:) She put a pencil into her pocket.

[Bella then wrote on the board what she had said.]

Q. Goldie and Louise, put on your hats.
Q. What did you do?
A. We put on our hats.

[Louise then wrote on the board what she had said.]

Q. What did Louise and Goldie do?
A. They put on their hats.

[Bella then wrote it on the board.]

MISS GAWITH: Talk to Goldie and Louise about their hats.
Bella: You put on your hats.

[She then wrote on the board: They put on their hats.]

MISS GAWITH: (Holding a bug in her hand.) What is that?
Louisa: A bug.
Q. What color is it?
Goldie: Brown.
Q. How many feet has it?
Louise: Six.
Q. Can it walk?
A. Yes.

Q. Can it fly?

Louisa: I do not know.

Q. Is it dead?

A. No.

Q. Can it see?

A. Yes.

Q. Who made the bug?

Louisa: God.

Q. Are you well?

A. I am well.

Q. Talk to Louisa.

Bella: You are well?

Louise: We are well.

Q. Goldie, read that. (Referring to two diagrams on the board, one representing the position for *s* and the other for *ee*.)

A. See.

Q. Who made the basket?

A. A man.

Q. Who made your dress?

Louise: Miss Smith made it.

Q. Who made that (pin-cushion)?

A. A girl.

Q. Who made the flowers?

Louise: God.

Q. Who made the book (a hektographed note-book)?

Goldie: You.

Q. Who made that leaf?

Louise: God.

Q. Who made the stars?

Louise: God. "He made the stars."

[Each repeated it.]

Miss Yale: By request we have brought in to-day, though not as a part of our work here, some manuscript lessons and some letters written by the pupils of this class without assistance. They were written on the last day of this term, and have not been corrected.

Miss Yale: The sentences which are now being written on the board have never been seen by the children. They have seen some of the words, but not the sentences.

[The teacher wrote on the board, "Do you see how fast the snow falls? The roof is white." Each child repeated it.]

MISS YALE: The teacher will give them some new words that they have never had.

Q. What is that? (Holding up a match.)

LOUISE: I do not know.

[After the teacher had pronounced the word, the tpupils pronounced it and one child was told to wrie it. She wrote *mach*, and then *match*.]

Q. What is that? (Holding up a shawl.)

LOUISE: A coat.

Q. It is not a coat but a shawl.

[Each repeated the word shawl in turn. Louise wrote it.]

THE PRESIDENT: My attention has been directed to the fact that the only pupils from the Clarke Institution which have been before us have been in the lower grades. We would like to see the more advanced work, if Master George Hull would consent to do this before us.

MISS YALE: Will Miss Sparrow ask George a few questions? George, are you willing to answer a few questions?

MISS SPARROW: How long have you been at the Clarke Institution?

GEORGE: Four years.

Q. Before that where did you go to school? A. In Washington.

Q. Who was your teacher? A. Dr. Bell.

Q. How long were you Dr. Bell's pupil? A. About two years.

Q. How long have you been in school altogether? A. Six years.

Q. How old were you when you first went to Dr. Bell's school? A. Four years.

Q. Can you hear at all? A. Yes, some.

Q. Can you hear me speak to you now? A. No.

Q. What can you hear? A. Noise.

Q. Noise of what? A. The whistle of the steamboat.

Q. Can you hear the whistle of the cars? A. Yes.

Q. Can you hear the noise of the piano? A. Yes.

Q. Can you hear a dog bark? A. Yes.

Q. Can you hear your dog bark? A. Yes, I can.

Q. What do you study in school? A. Arithmetic, geography, history and language.

Q. Which study do you like the best? A. The study of language.

Q. Why? A. Because it is the most important.

Q. Are you sure that you enjoy it the most of all? A. I think so.

DR. NOYES: What book do you like best to read? A. I don't know much about books.

Q. Do you ever read the newspapers. A. Sometimes.

Q. What do you like to read about in the papers? Base-ball news? A. Sometimes I read about base-ball.

MISS SPARROW: You have found some news items to bring to school. What kind of news items did you look for? What were they about? A. Flour for the starving Russians.

Q. What else? A. The turquoise mines of New Mexico.

Q. When were those mines first discovered by the white people? Was it before America was discovered by Columbus, or after that? A. After Columbus discovered America.

Q. When did Columbus discover America? A. Oct. 12, 1492.

Q. What will take place in Chicago in honor of the discovery of America by Columbus? A. The celebration of the four hundredth anniversary of the discovery of America by Columbus.

TEACHER: You left out *h*. Give the answer again. (He did so.)

Q. Are you going there? A. No, I think not.

Q. Have you asked your mother? A. Yes.

Q. What did she say? A. She said that she did not think we would go.

Q. Ask your mother if she is going to take you to Chicago?

Q. GEORGE: Mother, shall I go to Chicago? A. I will see.

DR. PEET: Do you wish to go and see the World's Fair? A. I would like to very much.

DR. PEET: Then tell your mother so.

GEORGE: (Turning to his mother.) I should like to go to the World's Fair very much.

MISS SPARROW: Since you have been at Lake George, you have heard something about United States History. What have you heard?

Q. Did you watch the children on the platform when they were talking about history? A. Yes.

Q. What did they talk about? A. About Paul Revere's ride.

Q. Who was Paul Revere? A. He was an American officer—no, I think he was a private.

Q. Who wrote "Paul Revere's Ride"? A. Henry Wadsworth Longfellow.

Q. Where did Longfellow live? A. Portland, Maine.

Q. Where was his home during the last year of his life? A. In Cambridge.

MISS YALE: Here is a paragraph that one of the gentlemen would like to have you read.

THE PRESIDENT: I may say that when George was at my little school, I tested his hearing carefully at that time, and he simply had a perception of sound which was not sufficient to be made of any use.

MISS SPARROW: We have tested his hearing, but we make no use of the little which he has.

GEORGE: (Reading the paragraph.) "Governor Flower has pardoned five men who are serving terms at the Sing Sing Prison. Count five more votes for the Democratic ticket at the next election."

THE PRESIDENT: I would say that George was born deaf and has never heard speech. I know that because I knew him a good many years ago.

MR. BOOTH: Did you teach George personally, Dr. Bell?

THE PRESIDENT: My teachers taught him, but his great advance has been made in the Clarke Institution, as he was very young when with me.

MISS YALE: May I answer a question which has been asked? "Why do you not have your pupils speak louder?" We do not want them to do so. An ordinary child's voice could not be heard in this room unless he spoke in a much louder tone than ordinarily, or in that high piping tone so common among children. They are not to be orators, and their voices are loud enough to be heard in ordinary conversation.

CLASS FROM THE GRAMMAR DEPARTMENT OF THE HORACE MANN SCHOOL, BOSTON.

WEDNESDAY AFTERNOON, JUNE 29.

MISS ELLA C. JORDAN: The work to-day is to exhibit the use of speech-reading in daily lessons. I always review the lesson of the previous day before giving a new one. (To the pupils.) You remember some time ago I told you about the English people who came to America to settle. Where did they settle? A. In Virginia.

Q. Tell me who first sent colonies to Virginia? A. Captain John Smith.

Q. But before him there was another man; can you tell me who he was? A. Sir Walter Raleigh.

Q. Did he send more than one colony? A. Yes; he sent two.

Q. He sent three colonies; did the people stay in America? A. Not very long.

Q. Then Captain John Smith brought some men to America; where did they settle? A. In Virginia. A. In Jamestown.

Q. Did they stay in America? A. No; Sir Walter sent three colonies; the people did not stay.

Q. Yes; Sir Walter sent three colonies, and the people did not stay, but Captain John Smith sent a colony, and those people and Captain John Smith staid. Now I am going to tell you about a man of whom you never heard. Some French people came and they were not successful; I won't tell you any more about them, but I will tell you of a man whose mame was Champlain. Champlain was a famous French sea-captain. What does famous mean? A. Well known.

Q. His father was a sea-captain; he came to America and tried to make a settlement; upon what ocean did he sail? A. Atlantic.

Q. Yes; and through the St. Lawrence River; where is it? A. In the northeastern part of North America.

Q. Humphrey says in the northeastern part of North America. I should say north of the United States.

Q. Another Frenchman had sailed up the St. Lawrence before, but he did not stay there. Champlain sailed up the river and settled in a place called Quebec. Have you studied about Quebec in Geography? A. No.

Q. He settled in Quebec because he wanted to open a fur trade; do you know what a fur trade is? A. No.

Q. Who lived in America before the white people came? A. Ralph Lane.

Q. Where did Ralph Lane come from? A. England.

Q. I asked who lived here before the white people came? A. Indians.

Q. Yes; the Indians lived here, and what did the Indians do? A. Plant corn.

Q. When the Indians were here all alone what was their business; what was their work? A. Planting.

Q. What else; how did they get their living; how did they get their food to eat? A. From the gardens.

Q. Do you think they ate vegetables all the time? A. Yes.

Q. How do you think they got their food? You know what the Indians did; what did they do? A. They planted.

Q. Yes, they did something else, too. Were there many houses in America then? A. It was all woods.

Q. What lived in the woods? A. The Indians.

Q. Yes, and something else. A. And wild animals.

Q. What did the Indians do to the wild animals? A. They shot them.

Q. The French people knew that the Indians got nice fur from the animals, and they thought they would like to come to America and get that fur, so Champlain came and bought fur from them, and sent it home to France to the people there. There were many Indians living near Quebec, on the St. Lawrence. Some liked the white people and some did not. Do you remember any white men who were troubled by Indians long before? A. Ralph Lane.

Q. What did they do to him? A. They tried to kill him.

Q. They told him to sail up the Roanoke River to the Pacific Ocean, but this was not true. Did he believe them? A. Yes.

Q. How do you know Ralph Lane believed the Indians? A. You told me.

Q. Yes, I told you about Ralph Lane, but how did I know that Ralph Lane believed them? A. You saw it in a book.

Q. He believed the Indians because he did what they told him. Some of these Indians were friendly and others were not friendly to the whites. The Indians, who liked the white people, told Champlain if he would help them to fight against other Indians they would show him a beautiful lake. This was in the winter, and the next summer some of the Indians went with him and two Frenchmen, and they found a beauti-

ful lake. Do you think the Frenchmen helped these Indians to fight the other Indians? A. No. A. Yes.

Q. What did the Indians tell Champlain? A. I don't know.

Q. What did they tell him they would show him? A. They told him that they would show him a beantiful lake if he would do something; what was it?

Q. They told Champlain if he would help them to fight the Indians who were troubling him they would show him the lake; now what did they tell him?

Q. They told him that they would show him a beautiful lake, and they showed him the lake, and they named the lake Champlain. Why did they name the Lake Champlain? A. In honor of the discoverer.

Q. Humphrey knows; don't you know, Mary?

Q. Now why did they name it Lake Champlain, and not Lake George, or something else?

Q. Who found the lake? A. The Indians.

Q. But who was with them? A. White men.

Q. What was the name of one white man who was with the Indians?

Q. What is the name of the Frenchman I have been telling you about?

A. Don't you know what I said, or cannot you pronounce the name?

Q. What do you mean? Don't you know what I have been talking about? A. About the Indians.

Q. What was the name of the famous French sea-captain? A. I don't know how to say it.

Q. I thought, and I think the people will think you do not know what I am talking about when you say "I do not know." Champlain.

[This was repeated by the class and then written on the board by one of the pupils.]

Q. Who was Champlain? A. A captain.

Q. Did he live in England? A. No; in France.

Q. Then what do we call him? A. A Frenchman.

Q. Where did he go? A. To Lake Champlain.

Q. Where is Lake Champlain? A. In the eastern part of Vermont.

Q. Where is it Edith? A. Near Lake George.

Q. Between Vermont and what other State? A. It is between Vermont and New York, and north of Lake George.

Q. If we should sail through Lake George we would come to Lake Champlain. Edith told us why Champlain came to America. Do you know why he wanted to come here?

Q. What did he want to do or get in this country?

Q. Do you remember, Humphrey?

Q. What did he come to America for? A. To find a lake.

Q. Did he know about the lake before he came to America? A. No.

Q. What did he come here for? A. To find the Pacific.

Q. Yes, the French and English came to America to find the Pacific Ocean, but what did Champlain expect to find here? A. The Indians.

Q. What did he think he could get from the Indians?

Q. What did he think the Indians would give him?

Q. What did the Indians have here in America?

Q. What did the Indians get? A. Furs.

Q. What did the Indians catch? A. Fish.

Q. What else did they catch?

Q. Don't you remember what the children told me were in the woods? A. Indians.

Q. What else lived in the woods? A. Animals.

Q. What did the Indians get from the animals. A. Furs.

Q. Then what did Champlain want to get from the Indians? A. Furs.

Q. What did he want to do with the furs?

Q. Did he want them for himself? A. Yes.

Q. He was a very selfish man to want to do that. A. He wanted to take them to France.

THURSDAY AFTERNOON, JUNE 30.

MISS SARAH A. JORDAN: It is supposed that before entering the classes of the Grammar Department of our school all the pupils have acquired the elements of speech and that they have had practice in the consonant combinations. My work with them has been to correct the faulty use of these elements and combinations and to help them to acquire an agreeable quality of tone. The plan which I have used to do this is, first, to bring the speech as far forward in the mouth as possible; also to give the pupils an idea of the lightness or delicacy of the touch of the vocal organs as they come in contact; also to give them exercises for the flexi-

bility of the vocal organs. I have first directed them, to take a position of the tongue, the sides touching the upper teeth and the point below the lower front teeth. (To the class:) I want you to take the position of the tongue, putting the sides of the tongue against the upper teeth and the point just below the lower front teeth. After you have taken that position, I want each of you to say three times:

mĕ, mā, mē, mā.

Keeping the tongue in the same position, take

tĕ, tā, tē, tā.

Give

sĕ, sā, sē, sā.

Now, we will go from that to

mē, mä, mĕ, mä.

Keeping the tongue up at the sides as before,

Take

sē, sä, sĕ, sä.

Then

sĕ, kä, sē, kä.

Now don't think of your throats, or of your lips, or of your tongues, but think of your fingers as you hold them out, and put your minds upon the ends of your fingers. You may hold out your hands and take the exercise,

mĕ, mā.

You may take another one,

tē, tā.

Mary, you may take

mĕ, sā.

In this exercise I want you to use your tongue, as it touches the upper part of your mouth, very, very lightly. Take the exercise,

lä, tā, tō, tā.

Now,

lä, lā, lō, lā.

Next,

sä, sā, sō, sā.

Now, take this a little faster,

tä, tā, tō, tā,
sä, sā, sō, sā,
lä, lā, lō, lā.

We will go from one to the other,

sä, sā, sō, sā, tä, tā, tō, tā, lä, lā, lō, lā.

I have found these exercises very helpful in the correction of stammering. A few months ago a boy, who had lost so much of his hearing that he was not able to go on in a public school for hearing pupils, entered our school. He had a very bad habit of stammering—not throat stammering, but he found great difficulty in pronouncing words with the labials and linguals. By the use of these exercises the habit has almost entirely disappeared. Through such exercise an idea of accentnation has been given. (To the class.) We will take the same exercise and accent the first part, like this:

tä', tā, tō, tā.

Accent the first and the third part,

tä', tā, tō', tā.

Accent the last part,

tä, tā, tō, tā'.

We will now take some of the combinations,

strē, strā, strī, strō,

sprē, sprā, sprī, sprō,

scrē, scrā, scrī, scrō,

street, strike, straight.

Pronounce these words, accenting in each the syllable that is marked:

express', conven'tion, prevent'.

WEDNESDAY AFTERNOON, JULY 6.

[A paper on "Conversation" was read by Miss Elsa Hobart. This paper will be found in the "Appendix."]

One of the pupils recited a part of "Paul Revere's Ride."

MISS HOBERT: What did Humphrey talk about? A. He was talking about "Paul Revere's Ride."

Q. Do you remember anything he recited? A. No.

Q. Will you please tell us something, Edith?

ANOTHER PUPIL: When I was almost three years old, I went away to a picnic with my mother and my father. When I reached the country I didn't know the name of the country. We took a walk and the lady asked me how old I was. I said I was seven years old; but my father told the lady that I was two years old. When I came home from the picnic I saw that my brother had broken my doll's face. I told my mother to please whip him with a slipper. When I went into the other room my mother didn't whip him.

TEACHER TO ANOTHER PUPIL: What did she say?

A. When she was three years old she went to a picnic with her father; she went to the country, but she does not know the name of the place.

ANOTHER PUPIL: She told us about the picnic; when she was three years old, she went to a picnic with her father and mother.

THE TEACHER: Please tell us something, Mary.

THE PUPIL: On the fourth of July the people went on a steamboat and they saw a great many mountains. I saw an eagle flying up into the air. When I came home from the steamboat I didn't see any fire-works.

THE TEACHER: What did Mary talk about?

A PUPIL: She talked about the Fourth of July, she said that a great many people went in a steamboat on the Fourth of July.

Q. Which Fourth of July? A. This year; she talked about the Fourth of July this year; she said that a great many people went in a steamboat on the Fourth of July and she saw a great many mountains. They saw an eagle flying up in the air.

SIXTH GRADE CLASS FROM THE PENNSYLVANIA INSTITUTION, PHILADELPHIA.

THURSDAY AFTERNOON, JUNE 30.

MISS YALE: The next exercise this afternoon is by the Sixth Grade of the Oral Department of the Philadelphia School. The work of this class will be carried through several successive days. The exercise to-day is on Speech Reading.

[A paper on "Speech Reading" was read by Miss Susan E. Bliss. This paper will be found in the "Appendix."]

MISS BLISS: Sometimes the teacher takes a single sound or two or three sounds and gives them separately, having the children either speak or write them. For instance, we give the sound of *l* and *t*. Then we give words containing those sounds: *lightly*, *tightly*, *little*, *title*.

MISS BLISS: Then we give alliterative sentences. For instance:

"A little lily lying all alone along the lane."

Trim Tristam Trotter trampled on the trim tradesman's trimming.

[The pupils read from the teacher's lips and wrote. The best example was: Trim Tristam Trotter trembled on the trim trainsman's trimming.]

DR. BELL: Do they know the meaning of those words?

MISS BLISS: Not at all.

DR. BELL: Tradesman's—does she know the meaning of that?

MISS BLISS: No, sir.

DR. BELL: All this is entirely mechanical.

MISS BLISS: Yes, sir. We give very little of the mechanical drill. We keep that in the background as much as possible, but we give the ehildren *some* entirely mechanical work, letting them put down the positions they see without any regard to the meaning of the words.

DR. BELL: When you give *tr*, and the pupil reads *dr*, would you call that a mistake?

MISS BLISS: No, sir. In mechanical speech reading I should call that absolutely correct. For instance, when the child wrote Dristram instead of Tristram I should call that correct speech reading. We find that speech reading, after the first grade, is so closely interwoven with the work of the school, that it is hard to tell the many ways we teach it. Sometimes we play games, in which the children watch each other, as well as the teacher. Perhaps I

ought to say that these children are not at all familiar with me; I have never had them under my charge; they are not my own pupils.

MISS MCDOWELL: Two of these children were born deaf, and one of them has a brother and sister also deaf. Sarah, who was here last year, lost her hearing when she was a very little girl.

A MEMBER: How long have they been under training?

MISS MCDOWELL: Seven to eight years.

MISS BLISS: We will now play a little game. (To the children.) I am going to think of something and I want you to find out what it is by asking me questions. (To the first child on the right.) I am thinking of something.

1. Does it belong to the animal kingdom? A. Yes.
2. Is it in Philadelphia? A. Yes.
3. Is it tall? A. No.
1. Is it a man? A. Yes.
2. Is he thin? A. No.
3. You are thinking of Mr. Crouter.

MISS BLISS: Sarah, you may think of something.

SARAH: I am ready.

1. Does it belong to the vegetable kingdom? A. No.
2. Does it belong to the mineral kingdom? A. Yes.
3. Is it useful? A. Yes.
1. Is it gold? A. No.
2. Is it long? A. Rather.
3. Is it in America? A. Yes.
1. Is it beautiful? A. Yes.
2. Is it a diamond? A. No.
3. Did you tell me that it was useful? A. Yes.
1. Is it made of iron? A. No.
2. Is it silver? A. Yes.
3. Is it a breastpin? A. Yes.
1. Is it in this room? A. Yes.
2. It is a breastpin? A. Yes.
3. Then it is Miss Bliss's breastpin. A. Yes. (Applause.)

MISS BLISS: This game gives the children an opportunity to read the speech of pupils as well as that of the teacher, and at the same time they they can get a great deal of language and general information. But it is only one of the many devices which we use in the school-room for the improvement of speech reading.

MR. ELMENDORF: Ladies and gentlemen, I am going to ask these children a couple of questions in simple English. You may

think they have no importance, but I want to see whether you know what I say as well as they. (To the children:) I am going to ask you something now. I want you to repeat what I say. Can you see me? [Yes.] Very well.

[Mr. Elmendorf here spoke to the children.]

ONE OF THE CHILDREN: You didn't move your lips much.

MR. ELMENDORF: (To the andience.) I don't know how many children I have asked these questions during the last ten years, but I have never had but three deaf people give them correctly, and never but one hearing person. They are—

"Can-a-goat-eat-ivy?

"Can-a-mare-eat-oats?"

I simply give this to show you a peculiarity of our language, and the peculiar sounds with which we meet. It is a surprise to me, after spending a long time in teaching, that our children can get as much as they do. I wish to say that you have seen superb speech-reading here to-day. A young lady asked me these questions a long time ago, and I didn't know whether she was speaking English or not. I gave this to-day because there was no sense in it at all. I spoke it slowly, indeed, the first time. You can get part of it, and I wanted to see how much they would take. Probably they have not had the practice of reading a man's lips partially covered with a moustache. I wish to say in regard to this, that a person unaccustomed to reading the lips covered by a moustache, finds it extremely difficult at first, but after practicing a day or two the difficulty is overcome. I frequently brush my moustache down over my mouth, in order to accustom the pupils to it, for the reason that when our pupils leave the Institution, people out in the world are not generally willing to shave off their moustaches for their benefit.

Q. (To the children.) What is your name? (Names given.)

Q. Where do you live? A. In Philadelphia.

Q. And you? A. In Philadelphia.

Q. And you? A. I live in Philadelphia.

Q. I live in New York; do you know where it is? A. Yes.

Q. Which is the larger, Philadelphia or New York? A. New York.

Q. Why do you think New York is larger than Philadelphia? A. Somebody told me so.

Q. Do you know how far it is from Philadelphia to New York? A. About ninety miles.

Q. How would you go from Philadelphia to New York. A. In the train.

Q. You wouldn't walk? A. No.

Q. Why? A. Because it is so very far.

Q. How long does it take you to go in the train? A. About three hours.

Q. If you go on a very fast train? A. Two hours and a half.

Q. How did you come here? A. I went to Broad Street Station in Philadelphia; from Philhdelphia to Jersey City on the train; from Jersey City to New York on a ferry-boat; from New York to Albany on the Hudson River boat; from Albany to Lake George in the train; and then rode here in an omnibus. (Applause.)

FRIDAY AFTERNOON, JULY 1.

MISS DWIER: We began the study of physiology in the sixth grade during the last half of the present school year. During the term the lessons were of the simplest character, principally carried on by means of conversation, and afterwards these conversations were condensed and given to the children in the form of manuscript lessons. This afternoon I propose carrying on just such a conversation lesson as we have in the school-room.

(To the class.) What is physiology? A. Physiology tells us of the action of each part of the body and of the work which it does.

Q. What are the parts of the body? A. The head, the trunk, the upper limbs and the lower limbs.

Q. This afternoon I am going to ask you about the bones in the trunk. Which is one of the most important bones in the trunk? A. The breast-bone.

Q. Yes, it is rather important, but I want one that is more important than the breast-bone. A. The spinal column.

Q. We will talk about that first; it is very important. Tell me another name for the spinal column? A. Backbone.

Q. Where is your spinal column? A. My spinal column is in the back.

Q. Where does it begin? A. From the brain to the coccyx and sacrum.

Q. Of what is the spinal column composed? A. The spinal column is composed of twenty-four little bones.

Q. What is between the bones? A. The cartilage.

Q. What is the cartilage like? A. It is like rubber, or a cushion.

Q. What bones are fastened to the spinal column? A. The ribs.

Q. To what are the ribs fastened in front? A. To the breast-bone.

Q. How are they fastened to the breast-bone? A. By cartilage.

Q. Why are the ribs fastened to the breast-bone by cartilage? A. Because it is used like rubber.

Q. Why? A. It makes the chest draw so we can breathe.

Q. Are all the ribs fastened to the breast-bone? A. All except four ribs.

Q. Are the four ribs on one side? A. No, two ribs.

Q. Where are the other two? A. Two ribs on the other side.

Q. What is a thorax? A. It is like a box.

Q. What are boxes for? A. A box is to put things in.

Q. Do we have any thing in this bony box? A. Yes.

Q. What is in it? A. The heart and lungs.

Q. Why are they in this box? A. To protect important organs.

Q. What are your lungs for? A. To breathe with.

Q. Do you know what bones are made of? A. Lime and gristle.

Q. Of what use is lime in bone? A. Because it makes the bone strong.

Q. What is gelatine in the bones?—you said bone is composed of lime and gristle, by gristle you mean gelatine. Now, what has gristle to do with the bones? A. So that the bones cannot break easily.

Q. Are the bones of children like the bones of old people? A. No. There is much more lime in the bones of old people and they can break easily. There is more gristle than lime in the bones of children.

Q. Did you ever see a baby whose legs were very crooked? A. Yes.

Q. The baby was very heavy and its mother allowed it to walk too soon, and the bones were not strong enough to hold its heavy body. They bent, because there was not very much lime in the bone to make them stronger. If the mother had waited a little longer until there was more lime in its bones, it would have been

stronger and its legs would not have bent. Do the bones of children break easily? A. No.

Q. Very often a child falls down, but does not break any bones. When people get old, do their bones break easily? A. Yes.

Q. Generally when an old person falls he breaks his bones because they are brittle—what does brittle mean? A. They break easily.

MISS MCDOWELL: Miss Dwyer is not the teacher of this class; indeed neither of the teachers who have conducted recitations with the class is its regular teacher.

SATURDAY AFTERNOON, JULY 2.

[A paper on "Arithmetic" was read by Miss Florence B. Dwier. This paper will be found in the "Appendix."]

MISS DWIER: Following out this idea of giving some advanced work, I have two or three problems that I will ask the children to perform.

First problem:—Mr. Smith bought a barrel of vinegar containing thirty-one gallons at eighteen cents a gallon, and sold it at three cents a pint; did he gain or lose, and how much?

First example worked out:

Mr. Smith paid $ .18 for one gallon.
He bought 31 gallons.

18
54

He paid $5.58 for three gallons.

There are eight pints in one gallon. There are 248 pints in 31 gallons. He sold it at $ .03 a pint for $7.44; difference, $1.86.

TEACHER: How do you know that is the amount he lost? A. Because he bought it for $5.58.

Q. How do you gain? A. I don't know.

Q. How do you know he gained? A. Because he sold it for $7.44, which is the larger; if he receives more than he paid for it he gained, because he receives more than he paid.

Second problem:—Mary bought 18½ pounds of beef at 16 cents a pound, and 2½ dozen lemons at three cents a piece; she gave the man a five dollar bill and he gave her one dollar and fifteen cents change.

Was that right? Did he give her too much or too little? How much should he have given her?

Second example worked out:

She paid $2 96 for 18½ lbs. of beef.
She paid .90 for 2½ dozen lemons.

She paid $3.86 for all.

She gave the clerk a $5.00 bill. He gave her $1.15 change. He gave her too much and it was not right. He should have given her $1.14.

TUESDAY AFTERNOON, JULY 5.

[A paper on "Geography" was read by Miss Constance E. Newton. This paper will be found in the "Appendix."]

MISS NEWTON: We will have an exercise in geography, the pupils asking one another questions, in turn.

Q. What river runs into the Gulf of Mexico? A. The Mississippi.

Q. What is a Cape? A. A Cape is a portion of land extending into the water.

Q. What is a Gulf? A. A Gulf is a body of water flowing into the land.

THE TEACHER: Is that right?

ANOTHER PUPIL: No; a Gulf is a portion of water extending into the land.

THE TEACHER: Is that right?

THE PUPIL: I think so.

Q. What bay is north of Spain? A. Bay of Biscay.

Q. What mountains separate France from Spain? A. The Pyrenees Mountains.

Q. What is an island? A. An island is a portion of water surrounded by land. Oh, no, a body of land surrounded by water.

THE TEACHER TO THE NEXT PUPIL: Now, Sarah, give her something very hard.

Q. What happened in Russia last winter? A. There was a famine in Russia.

Q. Describe the Mississippi River. A. The Mississippi River rises in Minnesota, in Itasca Lake; flows through Minnesota and Iowa, and between Iowa and Arkansas, Missouri, Louisiana, Mississippi, Tennessee, Illinois, Arkansas and to the Gulf of Mexico.

Q. Bound Pennsylvania? A. Pennsylvania is bounded on the north by New York and Lake Erie, on the east by New Jersey, and on the south by Maryland and Delaware and West Virginia, and on the west by Ohio.

WEDNESDAY AFTERNOON, JULY 6.

[A paper on "History" was read by Miss Constance E. Newton. This paper will be found in the Appendix.]

MISS NEWTON: The children will play this game. One child usually takes some character and tells the other children all she can about it, and then they tell her whom she is talking about. They don't know, and are supposed to guess.

ONE PUPIL TO ANOTHER: How do you do? I am a very brave man, and I am a captain of a ship; I was walking far into the woods, some of the Indians caught me; they put me under a tree; there were Indians around me; one of them told me the movement of the moon and stars, and they were very much interested in them. I asked them if they would allow me to write a letter to my friends. So then, when I was writing the letter they were surprised, because they never saw such curious marks, and I told my friends all about them.

ONE OF THE PUPILS GUESSING: Captain John Smith.

A. That is right.

THE TEACHER: This is the way the children play the game; at other times I ask them questions.

THURSDAY AFTERNOON, JULY 7.

MISS BLISS: I will tell these little girls a very simple story and let them reproduce it in their own language in writing. I have asked their teacher if she has any reason to suppose that they have heard this story before and she states that she has not.

Q. Have you ever heard the story about the dove, the bee, and the hunter? Do you know what a dove is? A. Yes.

Q. Do you know what a hunter is? A. Yes.

Q. Do you know what a bee is? A. Yes.

One day a dove alighted on a tree, which grew beside a stream of water.

Q. Do you know what the word "alighted" means? A. Yes.

The dove alighted on a tree which grew beside a stream of water, and looking down it saw a bee struggling in the water.

Q. Do you know what the word "struggling" means? A. Yes.

The dove thought it would try and rescue the bee.

Q. Do you know what the word rescue means? A. (By the teacher.) It means to save from danger.

The dove thought it would try to rescue the bee from drowning, so it picked a leaf from the tree and carried it down to the surface of the water and placed it very near the bee which was struggling in the water. The bee climbed up on the leaf, and as soon as its wings were dry, flew away.

A short time after that the hunter went into the woods to shoot. He saw a dove on a tree. He aimed at the dove; but, as he was about to shoot, a bee lighted on his hand and stung it. The hunter was surprised and dropped his gun and the dove flew away safely.

Q. Do you understand this story?

[Two answered, yes. The other said she did not understand.]

MISS BLISS: (To the audience.) Hannah can see with only one eye, and she could not see what I said. I will repeat it to her while the other children are writing it on their slates. We encourage the children to do this, in as simple language as they can, to express the ideas which are usually correspondingly simple.

[The pupils wrote the story:]

SARAH GOLDSTEIN: One day a dove was in a tree. Looking down, he saw a bee struggling in the water, and the dove thought that it would rescue the bee, so it got a leaf, came down from the tree, and placed the leaf very near the bee, and it jumped on it, and it was saved. One day a hunter walked along, he saw the dove in the tree, when he was just going to aim at the dove; the bee stung him, and the dove flew away safely. I think they were very thank ful to each other, because they saved their lives.

JENNIE DONOHUE: One day a bee was almost drowned. A dove was on the tree and saw the bee drowning. It dropped a leaf on the water and the bee climbed upon on it. It flew away. The dove saved it from drowning. One day the hunter wanted to shoot the dove, he saw it on the tree. He was going to shoot it, but the bee quickly came and stung his hand. He dropped his gun and it hurt his hand. The dove flew away. The bee saved it.

HANNAH WILSON: A dove was upon a tree looking down and he saw a pig, strolling along the water. The dove wanted to raise the pig too; the pig climbed up under a leaf and after a while a hunter came into the woods to shoot and he saw a dove. Just before he was about to shoot at it, and the pig lighted on his hat, and the hunter lost his cane, and then the dove flew away safe..

Q. How would you write the word "rescue"?

HANNAH: Reskue. (The other two wrote it correctly.)

Q. Do you think you understand what the word "rescue" means? A. Yes.

Q. Hannah, I told you I was going to tell you a story about a dove, a bee, and a hunter. Will you please write the word "bee" on the board?

HANNAH: The one word bee (be)? (She wrote it on the board *be*.)

Q. You wrote on your slate *pig*. I said *bee*. Did you think I said *pig*? Do you think that those two words look alike?

HANNAH: No, ma'am.

Q. When I said *bee*, you wrote *pig*, and I cannot understand why you wrote the word *pig*, when I said *bee*.

Q. Is that the way to spell *bee*? (Hannah had written it *be*.)

MRS. DR. BELL: Excuse me for interrupting, but I think *pig* and *bee* do look alike to the eye. I was watching as you told the story. I made the same mistake. I could not understand how dropping a leaf into the water could save a pig from drowning, and then I caught the word *wings* and saw that the other word must have been *bee*. When you say *pig* or *bee*, as you were doing just now, very slowly and distinctly, with much effort, there is no resemblance, but when spoken rapidly or naturally, in course of conversation, it is almost impossible to distinguish them.

MISS BLISS: I thank you for telling me this and am glad to hear it; *bee* and *pig* are so unlike to the ear that I could not understand how she could make such a mistake.

DR. BELL: I would like to say that I think this girl's report of what she thought you said is most reliable and interesting as showing the mental process of lip-reading. It illustrates the fact that mechanical lip-reading is only a small part of the art of speech-reading. By far the greater portion of the process is intelligent deduction, founded on previous knowledge of what the gibberish seen by the eye must be. The girl thought you were talking of a pig, and all the rest of her reading of your lips was colored by that idea. She knew a pig could not be saved from drowning by a leaf dropped from a tree; therefore, in order to get a sensible story, she read *strolled* for *struggle*, and so on. The whole report is a really clear attempt to make a consistent story of what she saw on your lips.

ANSWERS TO QUESTIONS.

FRIDAY AFTERNOON, JULY 1.

MISS YALE: We will take a few moments for answering questions that have been proposed. The first question on the list sent in to us was this: What is the best way to teach *h* to avoid disagreeable aspirations on the one hand, and on the other hand none at all?

DR. BELL: The trouble in my teaching is that I don't teach *h*. In fact, I think it very important that *h* should not be considered as an elementary sound at all. There are fourteen distinct sounds of *h*, and if you teach any one of these for *h*, of course the child gets that. There is no sound of *h*; *h* is a breath before a vowel. If you have the syllable *ha*, the position for *h* is the same as *ah*. In speaking *he*, the mouth must be in position for the *e*. Wherever *h* becomes a vowel it is the breath before the vowel and there are just as many varieties of *h* as there are vowels. It always comes before a vowel and is never in any other position.

MISS YALE: Is there any one who would differ from Dr. Bell?

MISS FISH: Dr. Bell, do you think *h* begins with the position of the vowel which follows it; for instance in the word *hue*?

DR. BELL: In the word *hue* we have a part element for which we have no letter. The only way we can spell that, is *yh*; that is an exceptional word.

MR. LYON: Is not the aspirate here the breath form of the *y* glide.

DR. BELL: It seems to me that the essential feature is the position when the mouth is open. Suppose I repeat the word *he* a dozen times, I don't feel a motion.

MR. LYON: The aspirate is often described as breathing through the vowel position. Do you think that is a proper way of describing it?

DR. BELL: Yes, but the forced expiration through the vowel position.

MR. LYON: It seems to me that in producing the *h* sound, we take the position of a vowel, and breathe through the vowel position with slightly forced expiration. If we devocalize the vowel

we ought not to have an audible aspirate, but if we assume a vowel position and then slightly force the expiration an audible aspirate is produced.

DR. BELL: My idea would be that the letter *h* has the same relation to a vowel that *f* has to *v*, or *s* to *z*. It is a breath before a vowel.

DR. GREENE: If you wish to convince Mr. Lyon of the fact that the relation of the sound of *h* to a vowel is the same as that of *f* to *v*, please ask him to sound first *f* with the mouth open and then *v*, without permitting the lips to touch the upper teeth. In the first case the result will be the sound of *h*, and in the second the vowel *u*, as in *but*.

MISS WARREN: I find the easiest way to teach *h* is to give two breaths, one with the mouth wide open, the other with the mouth half closed. I write a curve over the syllable for high vowels and under the syllable for low vowels; in that way we cover all the vowels.

SATURDAY AFTERNOON, JULY 2.

MISS YALE: The next question on our list asks regarding initial *b*, *d* and *g* and final *b*, *d* and *g*. I have asked Miss Potter to answer this question.

MISS POTTER: As *b*, *d* and *g* are similar in formation to *p*, *t* and *k*, they may be developed from them, *b* from *p*, *d* from *t*, and *g* from *k*, by adding voice. Since these sounds when taught alone almost always yield poor results, we teach them from the first in combination with a vowel: *a* or *u* is used at first and later the other vowels. For example, in developing the sound of *b* the pupil may be required to place his hand on the teacher's throat while the teacher gives *p* and then *bu*. The pupil will perceive the vibration in the latter sound, and then, with one hand on his own throat and the other on the teacher's, he should be required to repeat with her the same sounds in contrast; *d* may be developed from *t* and *g* from *k* in the same manner.

These sounds are often easily obtained, simply by imitation, the child attempting to repeat with the teacher *bu-bu-bu-bu-bu*, with continuity of voice, while feeling the vibration in his own throat and in the teacher's. It may sometimes be a help to have him feel the chest vibration. It often helps to have the pupil feel the vibration at other points. In giving *b*, vibration is felt most strongly in the cheeks and in the lips; in *d*, at the top of the head and in the

tongue; and in *g*, at the sides and back of the neck and in the tongue. Calling attention to the expansion of the pharynx aids greatly. Much better results are obtained by having the pupils give *b*, *d* and *g*, with less compression than *p*, *t* and *k*, rather than more.

Final *b*, *d* and *g* are usually found more difficult than initial, and, therefore, with us are taught later. Arnold, however, says that they should be taught first.

In teaching these finals, as well as the initials, much better results are obtained by giving them always in combination with a vowel; as *ub*, *ud*, *ug*. After a little the pupil may be shown that final *b*, *d* and *g* are followed by their corresponding non-vocals, a small *p*, *t* or *k* the children are told, and this is represented to their eyes by the same sound, *b*, *d* or *g*, written below, followed by a very small *p*, *t* or *k*, as *bud*, *bag*.

dt. *gk.*

MISS YALE: Development of *sh*.

MISS ELIZABETH FAY: This has been given me by Miss M. A. Allen, of Hartford, to read. "When I have failed to develop *sh* with the tongue in the proper position, I have often been successful in this way: Place the point of the tongue back of the lower teeth and with the manipulator push it back a little."

MISS FULLER: Assuming that the child has the element *s*, I should direct him to place his tongue in the position for *s* and give it, until he fully understood that I wanted that sound. Then I should direct him to draw his tongue to a point further back, but keeping the position for the *s*, which I consider similar to that for the *sh*, with the tongue spread out and the point of the tongue broadened. By practicing this position with that for the *s* and by giving the breath very delicately, so as not to change the position of the tongue, I think the child will easily acquire the sound of *sh*.

PROF. A. MELVILLE BELL: If you will allow me, the *s* relation is very close to *sh*. By merely manipulating the tongue while you are producing an *s*, you will produce the *sh* without any further effort in that attitude.

MISS YALE: What exercises will produce a good *z* and a clear *zh*?

MISS MCMASTER: Sometimes in attempting to form *z* or *zh*, the oral channel is narrowed back of the place where *z* and *zh* should be formed. This common defect may often be readily corrected by giving the child "blowing exercises."

MR. BUTTERFIELD: I have had very little difficulty in developing that; simply vocalizing the *s* and *sh*, I find it a comparatively easy matter to develop *z* and *zh*.

DR. BELL: I find it an extremely easy matter to develop *z* and *zh* and *s* and *sh* from hearing pupils. I am afraid the members of this association will not think it quite so easy a matter. May I be allowed to say to persons who are new in this association, that I saw Helen Keller a few days ago in company with Miss Yale. We tested her in speech reading. By placing her thumb under the tongue, upon the neck, and one finger in front of the lip, and the other finger in contact with the nose, she could read nearly every elementary sound. She had a greater ability of imitating speech through the perceptions derived from the sense of touch than our children have through the sense of sight. Why cannot we get the pupil to read by the sense of touch? I am convinced, from having seen Helen Keller, that you have got the means.

MR. LYON: Last year I made a series of interesting experiments in this direction. Knowing that every speech sound is produced by a peculiar and exclusive muscular adjustment of the vocal organs, I sought to make a deaf child cognizant through the sense of touch of the muscular adjustments and muscular changes incident to speech. Having located the child so that he could not see my face, I placed the palm of his hand against my throat and chin, and pronounced the elements *p*, *t*, and *k*. After I had directed his attention to the simple and comparative muscular adjustments—which characterize the English elements, I practiced him in short sentences. My experience with this child demonstrated to my mind the value of an expedient of this sort as an aid in imparting to the deaf a clearer understanding of speech sounds.

MISS YALE: In regard to Helen Keller, she not only read the elements, but she read words and sentences from the lips. A good many unfamiliar words, many sentences. Occasionally she lost an element, but by pressing her finger against the lips or point of the tongue she caught the position. It was not reading of elements, but of words and sentences from the lips.

DR. BELL: When the statement was made to me that Helen Keller could read words and sentences by the mouth, I thought it was stretching it a little, and determined to make a careful test. I had her teacher show me how she read speech. With the aid of Miss Yale, I will show you. (Placing his hand in position upon the throat and lips of Miss Yale). She places her hand in this way. First, she had her hand under the chin so she could feel the

movement; Secondly, she had one forefinger in front of the lips so she could feel the air coming out and no doubt got a great deal of information in this way, as she could follow the movement of the lips and realize the sensation of hot and cold air, etc. She had a middle finger here towards the nose, so that she could tell the difference between a nasal and non-nasal. When I came to think of it, I thought that child has more definite information concerning the elementary sounds than our deaf children have. In regard to reading words and sentences I saw remarkable results and I have no doubt there are great possibilities in this direction. Miss Yale tested her, and I have also heard from Mrs. Pratt that she also read stories to Helen which were understood. Mrs. Pratt, would you tell us exactly what your experience was?

MRS. PRATT: I have no familiarity with the use of the manual alphabet or of any methods employed in teaching the deaf. Have used speech altogether in communicating with Helen Keller and found but little difficulty in so doing. She reads my lips by the sense of touch. When walking with her on the street I have been able to explain to her the display in the shop-windows, introduce her to my acquaintances, etc. Talked with her as I would had she been a hearing child deprived of the sense of sight.

In the early spring of this year, while Helen and her teacher were my guests for a few weeks, I read to her with my mouth a portion of the first chapter of the book entitled "Old Fashioned Girl," she repeating the words as they were uttered, at first, each word separately, then two, sometimes three, in succession, and after some practice, very short sentences and parts of longer ones. She taught me to form the letters of the manual alphabet, and if she failed to understand the word from my lips, I would make the first letter of it with my fingers, when she usually recognized the whole word without further assistance. When we had a word with which she was unfamiliar, she would ask. "What is that? What does it mean?" The explanation often led to other inquiries and a lengthy discussion. Many amusing mistakes occurred because of my crude and imperfect use of the manual alphabet; to remedy this we had recourse to her books in raised print; then when I failed to make the letter correctly I would find it on the page of the book and place her finger upon it.

It may be of interest to mention that when we prepared for reading, Helen placed her thumb beneath my chin and her first finger on my lips; occasionally she used the second finger for this purpose; in that case the first finger was placed on my cheek close

to the nose. Her touch on my lips was very delicate—so light at times as to be, to me, almost imperceptible. I have often wondered if it was from the vibrations of air she derived her information, as much as or more than from the motion of the lips.

TUESDAY AFTERNOON, JULY 5.

MISS YALE: The next question on the list of those handed in is this: The development of *ch* and how to correct defects of the same.

MR. ELMENDORF: I have found it a very great benefit to children to show them that the position of the tongue is exactly like the bowl of a spoon; the edge raised so as to touch all around against the hard palate or inside edge of the upper teeth—the tongue being farther back than the position for *t*. Take the palm of the hand this way (illustrating), and there is the position for *ch*. For *sh*, which should be developed first, the edge of the tongue touches all around except the tip which almost touches the hard palate but not quite.

After the *sh* is formed the *ch* is formed from it by simply raising the tip, so, closing the mouth passage completely—a little force is necessary to cause an explosion of breath over the tip—the tongue keeping the position for *sh* an instant. I have found it quite easy to show the pupil this sound in this way (illustrating.)

DR. BELL: There is another defect of that sound that we have very commonly. It is giving a puff of air after *t* when we use *ts*, and *sh*. The pupil will try to make *ts* and put the *h* there. In fact the majority of them do that at first.

MR. ELMENDORF: That is the idea that I have had in giving *tsh*, because you generally get it *tush*, and you will be taking this position to anticipate the next position, and the child seems to have less difficulty. I think that *tush* sound is avoided.

DR. BELL: I would suggest commencing with *sh*, having this first, then having the puff of air after it.

MISS YALE: The next question is the development of *j*, and how to correct the defects of the same.

MR. ELMENDORF: That is exactly the same as the *ch* being vocalized. It is another thing to make the child see and hear as I see, and as I talk to the children as they have come here, I see they think they do, and I am glad they do. It is vocalized *ch*. I think, instead of being the tip of the tongue, it is a little further back than the tip.

MISS YALE: Will Professor Bell say any thing upon this subject?

PROF. A. MELVILLE BELL: In reference to *ch* I should teach that the *ch* is nothing more than a *t* finished in a different manner from a simple *t*. You can finish *t* in the position of *l*, in the position of *n* in the position of *r*, in the position of *y*, in the position of *s*, of *th* or of *sh*. For example, *cat*. Here I finish *t* in the position of *l*; *cat*—I now finish it in the position of *n*; *cat*—now in the position of *r*; *cat*—now in the position of *s*; *cat*—now in the position of *sh*.. The normal finish of *t* is by removal of the point of the tongue, but you may finish the element in any way in which you can emit the breath. Teach *ch* as nothing more than *t*, finished with a little hissing sound. There are so many shades of hisses that I should not, at first, insist on having the right shade, but be contented with any shade. When you indicate two complete elements in *ch* you create an error, and practically insert a vowel between the *t* and the *sh*. Every consonant. consists of a position and an action. In the sound of *ch* we have the first half of a *t*—its "position" only—then, instead of the ordinary simple recoil of the tongue, we have the "action" of *sh* to complete the articulation.

In reference to *sh* there is a peculiar difficulty, because in some respects the tongue seems to be closer to the palate for *s*, while the pitch of *s* is lower than that of *sh*. For both of these sounds the tongue is pointed and convex at the same time. When I first became aware of this fact I felt that it was a great discovery, but for years I was perplexed as to the exact relation of the two sounds. At first I associated the higher degree of lingual convexity with *s*, but afterwards I was led—as the result of my son's experiments with the deaf—to assign the more convex position to *sh*. I am not convinced yet that the first mode was wrong, but I am satisfied that the second mode is, on the whole, better.

The difference between *th* and *s* has not, in general, been correctly apprehended. The tongue is in essentially the same position for both sounds, with this difference, that the point of the tongue must intercept the breath, for *th*, leaving interstices at the edges, while for *s* the breath must pass freely over the tip; *s* thus has a single central channel for the breath; *th* has a "divided" channel. *th* differs from *l* in having its extremely contracted apertures at the very point of the tongue, while *l* has its wide channels of emission at the sides of the body of the tongue; *th* is generally considered to be a dental, but it is not necessarily so.. You can make a *th*

without teeth. The requisite adjustment of the tip of the tongue may be made on the gum, the palate, or even the upper lip.

What I have said of *ch* refers equally to *j*. The latter is the same articulation acting on voice instead of mere breath. The sound of *j* consists of the first half of a *d* finished by the "action" of a *zh*. While therefore we recognize *d* and *zh* in *j*, we must not suppose that *j* consists of two complete elements. If we finish the *d* independently, we practically introduce a vowel and make the *d-zh* a syllable.

MISS YALE: Will you give us something on final *ge* or *dzh*?

PROF. BELL: The sound is precisely the same as that of *j-a*, *d* "position" finished with the "action" of a *zh*; *d* is the main part.

As a rule, too much stress has been laid on consonants in teaching the deaf. My experience has been more with stammerers. I don't think I never devised an exercise of anything like the utility of one which I worked out for stammerers; and I am sure it might be made the basis of a far better articulation than is generally obtained with the deaf. The principle of the exercise is to make vowels the main thing and consonants altogether subordinate. The pupils were first made to produce a continuous sound, lasting for five, ten, twenty, thirty or more seconds; then they were taught to consider the whole mouth merely as a tube through which the sound is poured from the throat. Having got that idea into the mind, there is no difficulty in working it out. Explain that the mouth is for other purposes as well as for speech; that speech is, in fact, only a very subordinate purpose of the apparatus. Teach that voice is the essential part of speech, and that the motions of the mouth must not interfere with the flow of sound. The pupils were thus taught to speak, at first, as if they had no lips or jaw or tongue. The exercise was called "gibberish," because its aim was only to give command over the mechanical part of speech, apart from the expression of ideas. In this way vocal fluency was soon attained, and ultimately perfect distinctness of articulation. I am convinced that the same fundamental principle—the "gibberish" exercise—might be adopted to facilitate your work, and that it would do away with the excessive oral action which is so characteristic of the bulk of deaf pupils.

MR. ELMENDORF: I would call equal attention to the consonants and the vowels. I find a great many of our children, although they may articulate very nicely indeed, and may give vowel tones pretty well, the speech was wanting in proper volume and accent.

MISS YALE: Will Miss Fuller give us her opinion?

MISS FULLER: I hesitate to say anything in the presence of Prof. Bell. From him we have obtained the foundation of all that we know. If I may be permitted to ask a question, I would like to know if we may not improve this present rich opportunity by asking Prof. Bell to answer the questions which have been distributed among the teachers. I am sure we cannot go to a higher source for information.

MR. ELMENDORF: If you will put that in the form of a motion, I should like to second it.

MISS YALE: (To Prof. Bell.) Miss Fuller wishes that you be requested from this time on, day by day, to occupy the question period. Will Prof. Bell will be kind enough to do so.

PROF. BELL: I shall be very happy to do anything that I can.

WEDNESDAY AFTERNOON, JULY 6.

MISS YALE: Yesterday Prof. Bell promised to answer questions. He will now do so. I shall be glad to have the answers of all the questions given out handed to me; some will be published in the proceedings and some in the *Educator*.

PROF. A. MELVILLE BELL: The first question that has not already been answered is in respect to the development of *r*. Now, there are several forms of *r*; *r* may be made with a rattling vibration, as we hear it in Spanish and Scotch, or it may be simply a friction of the breath, as in English. The sound may be either vocalized or non-vocalized; *r*, as we hear it in such a word as *sir*, would be considered merely a vowel, but that the point of the tongue is slightly raised, so that the stream of air strikes against or vibrates the point of the tongue, in a degree corresponding to the force of expiration and the closeness of the tongue to the palate. In the English *r* the tongue scarcely yields at all to the breath-current, unless when a vowel follows the *r*, as in *ray*, *ride*, *great*, etc. In this country the chief differential characteristic of *r* is that the lips take part in the action. In developing *r* you have simply to get the tongue pointing upwards to the roof of the mouth without touching it. The closeness of approximation of the tongue, and the force given to the expiration, will determine the strength of the resulting *r*.

I am very sorry to see, in a recently published English book by Miss Laura Soames, the statement made that *r* has no phonetic effect unless followed by a vowel; that it is in fact silent; and that the words *arms* and *alms*, *lord* and *laud* are identical in sound. In

connection with this fact I may add that I read a paper a few months ago before the Phonetic Section of the Modern Language Association, and I took for my topic "The sounds of *r*." I was astonished to find that the members present seemed, for the most part, to have the same negative idea of *r* with Miss Laura Soames. I have always taught, and do still strongly maintain, that there is merely a question of degree between *r* before a vowel and *r* after a vowel. However much the latter is softened and smoothed, it is not obliterated—not "silent."

MR. LYON: Is initial *r* often substituted for glide *r*, in English, as spoken by Englishmen?

PROF. BELL: No, not substituted for the glide; the glide is universal wherever the *r* is not followed by a vowel, and often where it is, the glide is introduced if the preceding vowel is long. Thus in the word *fear* we have simply the glide *r*, but in *fearing* we have both the glide and the consonant *r*. (Thus, *fear-ring*.) So, an English speaker does not say *po-rous* but *po(e)-rous*; not *fu-ry*, but *fu(ə)-ry*; not *wea-ry*, but *wea(ə)-ry*; not *fai-ry*, but *fai(ə)ry*.

DR. PEET: Would you be willing to give the distinctions in the pronunciation of the words that you mentioned?

PROF. BELL: In the word *arms* the tongue rises so as to affect the stream of air, changing the vowel quality. It is therefore a vowel effect that we associate with *r* in *arms*. But the sound—being non-syllabic—is called a "glide." Is there or is there not an *r* in this syllable?

Arms. (The audience:) "Yes." *Alms*. (The audience:) "No."

The next question refers to the formation and development of *l*, initial and final. I don't see why initial and final have been mentioned. The sound of *l* is the same in both cases. The point of the tongue is raised to the same part of the palate as for *r*, but instead of merely pointing at the palate it is brought in contact with it. The tongue must completely shut off the breath at the front, and leave apertures free for its emission at the sides.

Only the vocal form of *l* is generally recognized in English, but the action of *l* may be made, and very often is made, without voice. The peculiar sound of Welsh *ll* is merely a non-vocal *l*, with narrowed apertures to produce sibilation.

The next question is: "Development of *e* long." There is sometimes great difficulty in getting a good *e*. A very ingenious speaking machine was exhibited some thirty or forty years ago. The man who made it—Herr Faber—told me that he had been

experimenting for seven years before he could get the sound of *e*. The cause of the difficulty was, no doubt, the want of the necessary relation between the front and the back oral cavities which are jointly essential to the mechanism of the sound. The persevering constructor was, however, ultimately successful, and his machine produced all the sounds of speech with marvelous exactness—only with a little peculiarity. The peculiarity was the same which we very commonly find among deaf pupils—namely, that it used a great deal too much wind. For instance, when you entered the hall where it was exhibited, you heard—as with a rush of escaping steam on every syllable:

How do you do, ladies and gentlemen!

That is exactly the way in which the machine spoke, but it spoke well; there was no mistaking its articulation. It sang, however, better than it spoke. The articulation was excellent and the intonation clear and free from breathiness.

The development of *e* from the mouth depends mainly on getting a free but contracted aperture over the arched front of the tongue, while the cavity behind the tongue is fully expanded. The adjustment of the front of the tongue is the most important point. This, fortunately, can be assisted by the eye, as well as by mechanical manipulation.

The next question is as to the development of short *i*. The two sounds, long *e* and short *i* are essentially the same; the only difference being that the tongue is less close to the palate, and the cavity behind the tongue less firmly expanded for the short *i* than for the long *e*. The sound is consequently less definite. The short *i* may be considered as simply an indefinite *e*. If you pronounce *e* carelessly and loosely the result will be the sound of short *i*.

MR. GILLESPIE: How do you correct the defects of the same?

PROF. BELL: Well, I don't know just exactly, except by putting the organs into the right position. I have never found any difficulty in getting the sound of *e*, compared with that experienced with the speaking machine.

The next question is: "The development of short *e* as in *end*." From the high position of the tongue for long *e*, gradually depress the front of the tongue, while maintaining the body of the tongue in the same shape, as nearly as you can, and a series of front vowels will be produced. You might have fifty in the series if you could individualize them. For convenience three only are recognized, namely: long *e*, the highest; long *a*, the intermediate; and short *e*,

the lowest. There should be no difficulty in producing the sound of short *e*. Simply depress the front of the tongue as far as possible, while you maintain a narrow aperture between the front of the tongue and the palate. The body of the tongue moves slightly backward on the palate at every step from long *e* to short *e*. Of course you will understand that the name "short *e*" does not mean a short vowel. The sound may be of any length.

The next question is: "Development of short *a*, as in *am*." This sound has the same formation as short *e*, with a difference corresponding to that between short *i* and long *e*. If you pronounce short *e* carelessly and loosely you will almost certainly make the sound of short *a* from the same attitude of the tongue.

The next question is: "Development of *er* and defects of the same." The vowel that arises from the position of the tongue for making *r* is sometimes called the natural vowel. If you point the tongue as for *r* but keep it away from the palate, so that it does not in any degree intercept the breath, you get the vowel sound of *er*. The English formation of this sound is much more open than that which prevails in America—arising from a different formation of the consonant *r*. The English *r* and also its vowelized form *er* have the top of the tongue depressed, so that the oral cavity is almost as large as for the most open vowel *ah*. The American *r* has the top of the tongue raised, and its vowelized form has, in consequence, a smaller cavity and a closer palatal sound.

DR. PEET: What is the difference between short *u* and the *u* in *ur*, *er*, etc.?

PROF. BELL: The short *u* and the sound in *ur* are the same. It is made by retracting the tongue so that the vowel aperture lies between the back of the tongue and the pharynx. Thus at three different elevations of the tongue against the pharynx we have this series of *u* sounds, *uh*, *uh*, *uh*. The sound of *er* simply has the middle of the tongue depressed without being retracted. Try if you can distinguish which sound I make now—whether it is the *er* sound, or the *ur* sound.

Your discrimination has been perfectly uniform. These sounds are in convenient contrast in this sentence: "Ladies, hang your furs upon these firs, or spread them on this furze."

You heard a clear distinction there, but it is a nice one. To produce such varieties satisfactorily gives a mastery over organic action. It may, however, be acquired by all persons with very little trouble.

The most important point among the remaining questions is with reference to combinations. In the first place I would say that there is no such thing as elementary combination in speech. In the closest apparent combination the sounds are really pronounced in sequence. On this account lightness of oral action is essential to fluency and distinctness. Several of these questions on combinations may be classed together, because they involve only one principle. The formation of a consonant—as I explained at a previous session—includes two distinct parts, a position and an action. The "position" should be taken softly and silently; the "action" belongs to the element that follows. If you want to make a *p*, for instance, the simple contact of the lips is the "position" for the consonant; its "action" takes place only in pronouncing the following letter. The *p* is not finished *per se* unless when final in a word.

The mistake made by pupils in pronouncing combinations, such as *pr pl, br bl, gr gl, cr cl, ts, tsh, tw*, etc., is in relinquishing the initial position, so as to make the consonant audible in itself. You may hold the position as long as you like, but it will be in silence. Not until the next letter is pronounced will the effect of the initial consonant be heard. Take the word *blow* for example: When the lips have taken the position for *b* that letter is practically done, and you have merely to add the rest of the word, independently. In doing so you can't help relinquishing the position for *b*, but the *b* is not finished before the "low" is pronounced. With *sk, st*, etc., the same fault prevails, of relinquishing the initial position, and finishing *s* by itself. The "position" of the consonant may be abrupt or prolonged, but its "action" will only take place in connection with the following element—if there is one. There are not many persons who can pronounce such a syllable as *act* without losing the effect of the *c*, or exaggerating it. The organic contact for *c* should be so light that the relinquishment of contact may be easy and distinctly audible, without any puff.

I now come to questions referring to the articulation of such combinations as *look at, did it, scrub your boot*, etc. You should by all means preserve the words. To say *loo-kat, di-dit, scru byour*, is certainly wrong. The final consonants should be finished independently—at least in deliberate utterance. In rapid speech, where all the words of a sentence run together, it is of no consequence; although, in such a phrase as *look at* one should always carefully avoid the *kat*. The difficulty which has led to the asking of these questions must have been associated with a too heavy con-

sonant action. A labored organic separation, and a puff of breath, are too commonly substituted for what should be merely effortless "relinquishment of position." As I mentioned before, an exaggeration of consonant action is the chief characteristic among deaf pupils; they should be taught to move the mouth much less, to "use all gently," and to speak directly from the throat.

Another question is: "How to get control of the organs in order to overcome compression." Overcome it by avoiding it. We do not want to make compression. Compression should not be known in speech. We want simple motion, and the easy sequence of one motion after another. So that I think the direction to put the tongue in position for the following sound before relinquishing the first position is rather an unwise direction. I should hold the first, and proceed to the second as if there were no preceding element.

"How to overcome laxity of the organs?" is another question. Laxity is a fault only when it prevents distinctness of articulation. Make the motions from point to point with sharpness and precision, but, in doing so, keep the organs as lax as possible.

Another question is: "Is it better with beginning pupils to strive for rapid speech, or for moderate and increasing speed as the pupils grow older?" The first thing to aim at is continuous voice, uninterrupted by mouth action. Therefore, rapidity is to be cultivated—but never by sacrifice of articulation. One who has not studied the subject can hardly believe how light good speech is. The letter *p* is commonly said to be formed by bringing the lips in contact; that is not right; it is made by separating the lips. You bring the lips together noiselessly and without pressure, and then they simply fall asunder to give egress to the sound.

Another question is: "For which should the greater effort be made, perfect enunciation or fluent speech?" I should aim at both and not to the separation of one from the other.

Another question is: "How to secure continuity of speech." That is very important. The fact must be recognized that the mouth-actions do not necessarily interrupt the voice. They are mere motions, superadded to the current of sound. Continuity of speech will be secured if you aim at giving unbroken voice throughout your clauses and sentences.

The next question is: "How to secure accent in words of two syllables requiring accent on the first, as Archie and candy." The best way to do that is in connection with taps. Make a tap for each syllable—one heavy, the other light.

Another question is: "How much may emphasis be developed by the teacher?" There is no limit. Emphasis is a quality we recognize in connection with all thoughts which are new. It is not the most important grammatical word that is emphatic, nor the verb in contrast with the noun or the adjective, or qualifying as opposed to qualified words—as some people think—but the word which is new to the context. Another, and the strongest kind of emphasis, is where contrast is suggested without being expressed; as in "*Thou* art the man;" the meaning of which is *thou* and *not* the other person spoken of. Emphasis may be developed by the teacher by discriminating, in sentences, those ideas which have been involved in previous expressions, from those which have not. The first are unemphatic, the others emphatic.

The next question is: "Possibilities in teaching inflection." This is, of course, very difficult to the deaf. I know that my son has succeeded in teaching deaf pupils to inflect wonderfully. That power may be developed more largely I am sure. The voice may be guided to make upward and downward movements, by analogical movements made by the teacher. Experience has shown that this is practicable. The subject is full of interest.

Another question is: "What is the best method of teaching time and rhythm?" I think rhythm is best indicated by light and heavy taps; and time by long or short, slow or quick motions of the hand. I do not think I can add anything to that.

Another question is; "Of what importance do you consider time and rhythm to a deaf child?" Of very high importance. Without time and rhythm speech has a great deal of disagreeable monotony, which may be corrected.

Q. "How may a child who has considerable hearing be taught inflection?" There is no difficulty in teaching the inflection of the voice to a child who has no hearing at all; consequently one who has hearing will be more easily taught.

Q. "How may clear,strong sounds be obtained from older pupils who formed the habit of giving certain elements incorrectly, when young?" Nothing but instruction and supervision will do that. The pupils must be led gradually to abandon the old habit.

Q. "The best articulation drill-work for older classes?" After all initial difficulties have been overcome, in making continuous voice and definite mouth movements, articulation drill should consist of the lightest actions of the lips and tongue that can be produced. At first consonants should be subordinate to vowels;

but afterwards the articulation drill work should include all the actions of the lips and tongue with the utmost precision.

Q. " How can the hearing of teachers be cultivated ? " That is an important question. I have tested many classes of adult students by reading a passage and stopping at intervals to ask what tone I had made last. It is astonishing that at least one-half could not at first discriminate the difference between a tone going up and another going down. Pitch was confounded with inflection. Inflection means progression towards a higher or lower point; while pitch is simply the difference between higher and lower. The hearing may be improved by learning to recognize nice distinctions in vowels, consonants and tones.

Q. " Of what value do you consider a whispering exercise as a means of cultivating the voice and gaining distinct articulation ? " For cultivating the voice it is of no value whatever, but as a means of cultivating fluent speech it is valuable.

Q. " In lip-reading exercises given in the school room to primary grades, which should be given more prominence, rapidity or exactness ? " I should say exactness by all means. Lip reading has no value without exactness. Rapidity should be secondary and exactness the primary consideration.

APPENDIX.

OUTLINE OF FIRST YEAR'S WORK AT THE CLARKE INSTITUTION.

The plan of this work, preparatory to the teaching of speech, has for its object the development of Attention, Observation and Imitation, through the cultivation of sight and touch, by exercises in motion, form, color, and number.

In order to make clear the proportion of time devoted to this work we have added the outline of the year's work.

The daily programme for September* is divided into periods of fifteen minutes. Play alternates with work, but whether it is play or work, the children think it all play—all is done in imitation of the teacher, all in unison. Whenever fatigue is shown a change is made from one exercise to another that there may be no cause for inattention.

I. Motion.

1. Gymnastics of the arms, hands and head; also running, jumping, hopping, etc. The children watch intently for each movement on the teacher's part and instantly follow.
2. Gymnastics of the face; opening and shutting the mouth; eyes, etc.; giving lip apertures for the vowels without voice, as, *ah*, *aw*, *oo*, *ee*.

II. Form:

1. Splint and Stick Laying. The teacher holds up a colored splint or stick and each pupil does the same. The teacher then lays hers on the table in front of her in a certain position and each pupil places his in a similar one. The hands are then folded. In this way stick after stick is added rapidly until the figure is completed. The children then reproduce the figure without the aid of the teacher. They soon learn that at any time during this exercise unexpected movements, which they are to imitate, are to be looked for; as, a sudden clapping of the hands.

* Term usually begins about the middle of September.

Colored or uncolored sticks, such as may be obtained at any Kindergarten Supply Depot, may be used. The majority of the children find it easier to follow the colored ones.

2. Writing. Tracing.

3. Diagram. A child's head is placed against the blackboard. The teacher draws the child's profile and afterwards adds hair, eye, ear, etc. She then points to different parts of the drawing and the child points to corresponding parts of his own head.

III. Form and Size.

Recognition by sight (not employing touch.)

1. Of small solids. A small geometrical solid is shown and then returned to a basket of solids. A child is then called upon to select the same one from the basket.

2. Outline form of surface. Pieces of thin wood of different shapes, known among kindergarten materials as "Tablets," are used.

3. Length and size. For length use sticks or pencils of different length. For size use a set of baskets, a set of blocks or balls of different sizes.

IV. Matching Colors.

1. Sets of objects, which are alike in all respects except in color, are used; match a red card with a red card, a blue splint with a blue splint, etc.

2. Different materials are used; match red wool with red silk, the red in the material of a child's dress with the red on the color chart, etc.

V. Form and Color.

Matching pictures. A game called "Picture Lotto," may be used for this purpose. It contains a set of large cards on which are several small pictures. There are duplicate single pictures upon smaller cards. The larger cards are placed upon the floor and the smaller ones given out, one at a time, to the children, who place them upon similar pictures on the large cards.

VI. Lip reading is used from the first. Simple commands are always given through speech.

October.

The programme for the next four weeks includes similar but more difficult exercises, and direct articulation work on the elementary English sounds.

I. Motion.

Gymnastics of the tongue; such exercises as are found in Guttmann's "Gymnastics of the Voice," pages 83 and 84. Hand mirrors are necessary in these exercises.

II. Form.

1. Stick-laying. More difficult figures are introduced this month, each figure being afterwards reproduced by the children on the blackboard, with crayons of the same colors as the sticks.
2. Writing.
3. Diagram. The head of a manikin is shown the class. A child points to different parts of another child's face, and the class find the corresponding parts on the manikin. In like manner they compare the outline of the manikin with the profile or outline drawn on the blackboard. Then separating the two parts of the head of the manikin the child observes the outlines of the organs in the mouth, and compares them with his own. With the knowledge thus acquired, he adds the outline of these organs to the diagram.
4. Network Drawing. The teacher and pupils are provided with kindergarten slates. A figure is rapidly drawn, line by line by the teacher, and, line by line observed and reproduced by the pupils. In this exercise, close attention, uniformity of movement and quickness in lip-reading may be cultivated.

III. Form and Size.

Recognized by touch (not employing sight.)

1. Solids. The child's eyes being closed he is given a single object from a basket of geometrical solids. After he has examined its form, the teacher places it in the basket with the others, from which the child then selects it, depending solely upon touch.
2. Surfaces. The same materials are used as when surface was studied through sight.
3. Length and Size.

In another exercise for the cultivation of touch, pupils are taught to recognize differences in weight. Balls of the same size and color, but of different weights are used.

IV. Articulation Work.

1. The elementary sounds usually taught this month are (in the order of teaching) *h, wh, f, p, t'h, t, s, k, sh, ar, v,* $\overset{2}{th}$, *z, aw, m, oo.* In general, one sound is mastered by the class before another is attempted.

The position for an elementary sound being assumed by the teacher, the pupils are led to observe it carefully and to imitate it. Touch must aid the child in the observation of concealed positions and movements. When all in the class can give the element, the letter or letters which represent it are written upon the blackboard. A chart of written characters is begun early, and as new sounds are taught the letters representing them are written upon this charts in the positions they occupy on our printed charts (given later.) The pupils have drill in reading these elementary sounds from the written characters, and in reading them from the lips.

As soon as an element is taught it is put into combination with the elements already taught and thereafter practiced almost wholly in combination. For fluency the pupils read and re-read lists of easy words and combinations; first, of one syllable and afterwards, of two or more syllables.

2. Combinations. The drill in combining two consonants is begun early in the month; as *f* with *p, fp; s* and *t, st;* etc. After the first vowel is given a consonant is combined with it first, as initial, then as final, and then as both initial and final; *tar, art, kart.*

These combinations, given from the lips, repeated by the children and written upon their slates form one exercise. The reading of them from the blackboard forms another. Care is taken that each sound is put into new combinations each day. The greater number of these combinations are words, although the children do not recognize them as such until later in the year. In planning this early articulation drill-work the aim is to give the class not only the elementary sounds, and these in combinations, but also to attain such a degree of fluency that later, when ideas are associated with words, but little time is required for special work on the pronunciation of simple words.

V. Number.

From a set of primary number tablets, with differently colored spots upon them, the simplest is selected, as, one having

two blue dots. The teacher holds this up for an instant only, and then calls a child to her. He picks up blocks the same in number and color as the spots upon the tablet—in this case, two blue blocks.

VI. Lip-Reading.

A short time is given each day to direct work on lip-reading. Simple sentences and names of objects are given. During the day these are made use of whenever possible.

NOVEMBER.

I. Motion.

1. Gymnastics of the tongue. Exercises in Guttmann's "Gymnastics of the Voice" are continued.
2. Vibration. (In point of time this follows the study of texture and strings given in the following topic.)

For use in vibration work, an inexpensive zithern, a guitar or a piano, may be used. In using a guitar the child puts his hand on the instrument where he can best feel the vibration. The child's eyes being open he is shown which string produces a slow vibration, and which a rapid vibration. After the child shuts his eyes, the teacher strikes a string, the child feels the vibration, and, opening his eyes points to the string which must have produced the vibration just felt.

II. Form.

1. The texture of various cloths and, also, their surfaces are studied. Strings of different size and of varying texture are recognized.
2. Diagram. An outline of the face, painted in white upon a slated board, is convenient for constant use. The lips, tongue, and soft palate change their position so frequently they are outlined more lightly than the rest. On this diagram the teacher represents different positions of these organs and the children take the positions as drawn; as lips shut, back of the tongue shut, etc.

III. Articulation.

The elementary sounds taught this month are (in the order of teaching) *-u-*, *-o-*, $\frac{2}{oo}$, *qu*, *ou*, *n*, *o-e*, *r*, *ur*, *ng*, *ee*, *b*, *d*, *g*, *j*, *-a-*, *l*.

IV. Lip-reading.

The work for this month includes commands, such as the following: Give me a book; a ball, etc.; open the door; shut the door; look at Mary, etc.

DECEMBER.

I. Form.

Diagram. The children recognize the positions represented on the diagrams for *p*, *b*, *m*, *t*, *d*, *n*, etc.

II. Motion.

Vibration recognized by touch. The exercise consists in distinguishing between vibrations of long and short strings. The exercise is conducted in the same way as the lessons in Vibration of last month.

III. Articulation.

1. The elementary sounds taught this month are (in the order of teaching), *–i–*, *x*, *i–e*, *—b*, *—d*, *—g*, *—ge*, *a–e*, *–e–*, *oi*, *u–e*.

2. Secondary spellings are given for the elements found on the chart; as, under long *e* represented by *ee* is given *–e*, *e'a*, *e–e*.

3. Combinations. Simple combinations of elements taught this month and more difficult ones of the elements taught the preceding month are given.

IV. Names of objects.

Before the first of January the children have learned the names of a few objects. These are now put into sentences and from this time on all new words are taught in sentences, or put into sentences as soon as possible.

V. Capitals.

Capital letters are taught this month and drill in them given by writing the elementary charts with capitals, also, in beginning with capitals the combinations written on the blackboard.

JANUARY AND FEBRUARY.

I. Vibration.

The work consists of exercises in distinguishing by touch vibrations of three and four strings.

II. Articulation.

In the time devoted to direct work on articulation (one hour a day) themore difficult combinations are taught, and the defective elements of individual pupils are corrected.

III. Diagram.

Diagrams for the more difficult elements are given.

IV. Words.

By the close of January a class has from seventy-five to a hundred words.

A new word is always given from the lips first, and when the class remember it as a spoken word, they are allowed to write it. They spell the word by sound, using the representative spellings as found on the * chart, for each sound. If told that it is not right they try the second spelling given on the chart; for example, the class pronounce the word *boat* and spell it *bote*. On being told that it is wrong they try the second spelling for long *o* found on the chart, and write *boat*. When the child has succeeded in writing the word correctly its written form is kept before him until the spelling is fixed.

MARCH AND APRIL.

I. Vibration.

The work consists in comparing the vibrations of the voice, as felt in the throat of the teacher, with the vibrations of the strings of an instrument. The child is able to modify his own voice by comparing the vibrations felt in his own throat with that felt in the teacher's throat.

II. Articulation.

1. Work on the "Drill Charts" is continued.
2. The children having learned the secondary spellings given on the elementary charts, make lists of words illustrating these.

MAY AND JUNE.

I. Vibration.

The work of March and April is continued.

II. Articulation.

1. Work on "Drill Charts" is continued.

[The charts consists of list of simple words containing difficult elements and combinations.]

2. Special work is done on final *b*, *d*, *g*. These sounds when final are given at first as closures simply, or "voice stops." At this time the class are taught that these closures are followed by an expulsion of breath (*bp*, *dt*, *gk*.)

Language work*—from January to June.

Action work is begun in January and continued to the end of the year.

Nouns. The pupils learn the names of all the common objects about them.

Verbs. The past, present and future of verbs are given and the pupils give simple, original sentences, using in most cases only the past and future. The present of a few verbs, such as *to like*, *to love*, *tosee*, etc., is used.

Adjectives. Numeral adjectives from one to ten and the most common descriptive adjectives are given.

Pronouns. The personal pronouns in most of their forms are used.

Questions. The pupils *answer* simple questions, written or spoken, beginning with *what*, *where*, *how many*, *how old*, and the different forms of the verbs *to be* and *to have*. Questions beginning with *may* are used by the children.

Journals and Letters. Simple journals and letters are written during the last three months of the school year.

Print. Miss Fuller's "Illustrated Primer" is used as a reading book.

A book containing the words taught during the year is sent home with each child. These words are classified, as—parts of the the body, clothing, things in the house, things out-of-doors, etc. The present, past and future of each verb is written out and sentences follow containing these verbs in the past and present tenses.

Any language work which the class has done during the year, which may be of help to the child or the parent at home, is put into this book.

* The column system as used in the Philadelphia Institution has proved of great assistance in all this language work.

VOWEL SOUNDS.

1 oo	2 oo	o–e	aw	–o–
(r)u–e		oa	au	
(r)ew		—o	o(r)	
		2 ow		

ee	–i–	a–e	–e–	–a–
–e		ai	—y	
1 ea		ay	2 ea	
e–e				

a(r)	–u–	ur
	—a	er
	—a(r)	ir
	—o(r)	
	—er=re	
	—ir	

---

a–e	i–e	o–e	ou	oi	u–e
ai	igh	oa	1 ow	oy	ew
ay	–y	—o			
		2 ow			

CONSONANT SOUNDS.

h—				
wh	w—			
p	b	m		
t	d	n	l	r—
k ck {ca co cu	g	ng		
f ph	v			
th	th			
s {ce ci cy	z s			
sh	zh		y—	
ch tch	j g— —ge dge	(x = ks)	(qu = kwh)	

SPEECH READING.

By Miss Susan E. Bliss.

Speech reading is a subject of liveliest interest to oral teachers of the deaf. It underlies all parts of our work and at times largely constitutes it.

As our experience widens, our field of work enlarges, and results accumulate behind us; surely we have reason for encouragement and hope; and may well say that the direction in which the work is tending is of as great consequence as its present position. And yet so many things occur and so much is said to dishearten us in our work that at times questions must arise in the mind of every thoughful teacher—questions so pertinent and persistent that they allow no evasion and no equivocation in their answer. If he cannot, with honest conviction, answer them in the affirmative, the teacher in whose mind they arise cannot hope to do effective work; for only to him who has great faith is it given to remove mountains of difficulty. The queries are in substance these: Do we know that speech reading is the best and surest messenger between the minds of the deaf and those of others, or do we only think so? Are the minds reached by it shown to be as well developed, as active, and as normal in their action as those of deaf persons reached by other means?

These inquiries can receive answers worthy of consideration only after careful examination and comparison of the results attained by all methods of communication with the deaf; and if then we can answer, assuredly, yes, the reply to the questions which are sure to follow is obvious. Have not they a great advantage, who, in addition to minds prepared to receive from hearing persons around them, are given the means whereby to receive? Are they not, if able to understand the speech of only those nearest to and most closely associated with them in daily life, brought more into touch with the whole speaking world than they would otherwise be?

In our own mind we find it quite impossible to make other than affirmative reply, which grows more and more emphatic as the years go on and we watch the course of those—alike semi-mute and congenitally deaf—who have gone out from us into different lines of work and see even some of those whom we regarded as far from satisfactory pupils in the class-room, by their ability to read the speech of fellow workmen, employers and friends, made hap-

pier and more intelligent than they would be without that ability We do not claim that their speech reading has made them just like hearing persons, but we do claim that it has made them far more like hearing persons than they could be without it.

Spoken language is made up of a succession of sounds resulting from the changing positions of the organs of speech, and the consequent modifications of breath and voice. Certain combinations of sounds are called words, and each word, or group of words, symbolizes an idea with which it is so closely associated in the mind that whenever those sounds are heard the idea for which they stand is at once called up. The sight may be trained to carry to the brain distinct impressions of the positions and action of the organs of speech in forming words and sentences and the brain to associate ideas with them. This connection between position and idea may be quite as close as that between sound and idea. Sensation—that ever active messenger between the brain and the outer world—may carry certain kinds of impressions over different routes. We may hear a ball crash through a pane of glass, or we may see it; in either case the brain is informed that the glass is broken.

It is not maintained that spoken symbols are as readily distinguishable to the eye as those afforded by the manual alphabet, for upon the analysis of speech the positions of some of its elementary sounds are found to be identical and others so similar that they can be distinguished only by a nicely-trained eye. Neither is it urged, we think, by any number of thoughtful persons that the association of idea and the visible symbol, or spoken word, is established with precisely the same effort as is required for the linking together of idea and the audible word—nature and heredity cry out against such claim. In other words, it is not held that speech-reading is as easily acquired as ability to understand language through the hearing, nor that it can be acquired in just the same way, nor that it in all respects takes the place of hearing—this would be but to say that four senses could do the work of five. But it has been proved beyond all question that, with well-directed practice, the eye may learn to recognize with marvellous rapidity, accuracy and precision the rapid succession of the positions of speech, and that the process in time becomes mechanical, so that the brain, without consciousness of the route over which the impressions are carried, is conscious only of the thoughts of which the positions of speech are the symbols. The recognition of the positions and actions of speech rather than its sounds is called "Speech-Reading," but it is only the material

part into which a soul of meaning must be breathed before it is complete. Intelligent speech-reading requires both a mechanical and an intellectual process—the doing and the knowing—and in its acquirement the doing precedes the knowing, as learning to finger correctly the keys of a musical instrument must precede the ability to reproduce the harmonies of the master composer. With this in mind, we first lead the deaf child to observe and remember the positions of lhe tongue, lips, etc., in forming those of the elementary sounds of our language which can be most easily seen; and from these we advance gradually to those which, on account of obscure positions in the mouth or similarity to others, are most difficult. The child, unaware of the Herculean task he has set out upon, sees no reason to lose courage, grapples with only those difficulties which, one by one, are presented to him, and to babes and sucklings in the intellectual world the mysteries of speech-reading are revealed. Even this first part of the work is not uninteresting to the child, as some suppose, for when only a few positions are recognized, words are formed and the child is led to make the visible word the symbol for a thought. We lay great stress upon the importance of its being made the *direct* symbol, so that ever after, when that thought occurs, the symbol called to mind may be the visible, spoken word, not a written word or a spelled word. In order that speech-reading may be rapid and sure, the mental process must be as uncomplicated as possible, and therefore there must be no translating from written, spelled, or signed language to visible spoken language. The latter must be the language the child thinks in and understands without interpreting. Speech-reading must become a fixed habit of the mind and nothing but entire dependence upon it from the outset will allow it to become such. But upon this point there is some misunderstanding and disagreement within, as well as without, our camp. Those who urge giving language by means of writing or finger-spelling, and *then* giving speech-reading, seem to us like builders who would rear the superstructure before the foundation is securely laid; but there can be no safety in that superstructure until the foundation is known to be secure. Pure oralists, whose cry is speech-reading first, speech-reading last, and speech-reading only, know that the first acquisitions of language through it are hard to win and cost much time; but they know also that the rate of acquisition increases with the amount acquired, and that the time spent in forming and fixing the habit of speech-reading is made up later on by the ease and rapidity with which language is acquired through its use. Remembering that it is the

means by which the deaf get language, not only from their teachers in the class-room, but from those about them wherever they may go in after-life, we should be content to make haste slowly, that the building on which we are working may have at least two of the requisites of a great piece of architecture—utility and durability. From almost the beginning, speech-reading plays much the same part in the education of the orally taught deaf child that listening to spoken language plays in that of the hearing child. The mechanical part is kept as far as possible in the back-ground and the child looks for the thought conveyed, not for its vehicle. But in almost all grades of our school-work we see the advantage of some mechanical drill, as the musician keeps up his exercises, even after he has become a skillful performer on his instrument.

In our Sixth Grade we have two hours a week for speech-reading exercises, some of which are strictly mechanical.

ARITHMETIC.

By Miss Florence B. Dwier.

The study of arithmetic possesses a two-fold value: first, a practical value, and, second, its value from the standpoint of mental discipline. It is on the importance of the latter value that I am inclined to dwell this afternoon, for it is that in my opinion which makes a knowledge of arithmetic of so much importance to deaf children. To be sure a practical knowledge of arithmetic is as necessary to a deaf person as to a hearing one; but if arithmetic be learned in such a way that it will prove a source of mental discipline to the pupil, the practical knowledge will have already been acquired.

My experience in teaching arithmetic to the deaf has been confined to the four fundamental rules. This may seem not very rapid advancement for the sixth grade and perhaps it is not. But it has seemed as rapid as could be found consistent with a thorough understanding of addition, subtraction, multiplication and division. By a thorough knowledge of the subjects we mean ability to perform any example that involves any one or any combination of the rules. It is here that I wish to consider the subject from the standpoint of its value as a means of mental discipline. I have heard frequent complaint among teachers of the deaf that it was very hard work trying to make a deaf child understand arithmetic. I think we have all noticed the peculiar attitude of a deaf pupil

toward a problem in arithmetic. He is inclined to view it as something apart from his own experience, yet involving a use of one of the fundamental operations. It is this attitude of mind of the pupil to the subject that robs it of its value as a means of mental discipline and it is this that the teacher has hardest work in removing. Once convince the pupil that the problems given are actual experiences, likely to occur to anybody, and especially to himself, and he is inclined to view the subject in a rational light. He considers the chief cause of this feeling of unfamiliarity to lie in the fact that the earliest lessons are not practical. The subject is taught in an abstract way at first—the child is taught to count in a parrot like way and in the same way is taught to put numbers together—the process of adding, without really experiencing the actual process.

I have during the past year presented division to a class, and it may benefit some teacher here who is quite as inexperienced as I was to hear how I did it. Following out the opinion that the pupil's earliest conception of a subject must come from a practical experience of it, I devoted the first half dozen lessons entirely to the distribution of articles among the pupils. I first told them that I had something that I intended giving them, say 40 nuts to the ten pupils, and I carefully and laboriously proceeded to give one to each pupil until I had completed the rounds, then I proceeded to go around again and again, thereby eliciting a few not very complimentary remarks on my lack of brilliancy from the pupils who considered such a performance indicative either of extreme youth or great stupidity. Before I had finished several of the pupils had volunteered to distribute the nuts more rapidly, and I gave the charge of the division into the hands of one of them. He proceeded to divide them after a moment's consideration and give four nuts to each pupil. In this way we performed in a practical way many problems in division, I being careful at first to give only such numbers of articles as could be evenly divided. There were mistakes made of course, but they only added zest to the lessons. During the first three or four lessons we did not resort to figures at all, and even after we had taught the way of writing division, we still insisted during several lessons that all written problems be illustrated in a practical way, the children using small wooden blocks for the purpose. We have for some time cherished the opinion that teachers of the deaf, and in fact all teachers are inclined to do too much for their pupils—they leave nothing for the pupil to discover. So in accordance with this idea, I restrained

myself from showing the pupils the relation which the multiplication table had to division. We allowed the pupils to discover this for themselves. Nor were we disappointed, for even the most stupid child will use his modicum of brains to discover a short way of doing a long piece of work. During these early lessons in division, there was no allusion made to any other operation. We for the time being, totally ignored the existence of such operations as addition or multiplication. This constant association with division made the pupils so familiar with it that they had practically no difficulty in recognizing it after we grew bolder and introduced it in connection with the other operations.

I consider the test of a pupil's thorough acquaintance with an arithmetical operation to be his ability to perform any problem involving the use of the operation, always providing the language used be within the experience of the pupils. Following out this idea, the pupils have been required to do examples in profit and loss, reduction ascending and descending, and other problems that are not usually expected of a pupil acquainted with only the four fundamental rules. In teaching reduction to the pupils they were not given any rule for doing a problem in reduction, nor were they told what principle was involved. They were simply made acquainted with inches, yards, pounds, pints, gallons, etc. After they had an intimate acquaintance with these and the relations existing between some of them, we expected that their knowledge of multiplication and division would be sufficient to show them how to reduce a quantity from a higher to a lower, or from a lower to a higher denomination.

By a considerate selection of problems, beginning with those that are very simple, and gradually selecting those that are more difficult and complicated, the pupil is subtly acquiring ability not only to perform the problems given, but to make use of the mental powers with which he has been endowed.

GEOGRAPHY.

By Miss Constance E. Newton.

From the first I have found Geography one of the easiest and pleasantest studies to teach. It was the first step in upper grade work, and the idea of studying from books like the older children was greeted with great enthusiasm. Whether this had anything to do with engendering a love for the study or whether it was merely a class peculiarity I am not prepared to say. But after my own

experience and some experience with hearing children, I have been again and again surprised at the comparative ease with which the class has remembered the long and difficult Geographical names and exact locations of places. The foundation work of Geography I found to be the only difficult part of it. This consisted in getting a general idea of the shape of the earth and the great bodies on it and learning the definitions for lake, island, bay, cape, strait, etc. These definitions were the great stumbling block. Known one day perfectly, the next they would be forgotten, or if not actually forgotten, yet could bear no cross-questioning. Whether an island was water surrounded by land or land surrounded by water, whether a bay was a cape or a cape a bay, and all similar questions, were always being answered at hazard—until I felt quite hopeless. Picture illustrations were used, but were not very helpful here. I think the fault with pictures is that it is so difficult to find them—containing the only thing you wish emphasized; though I have since seen some that were rather good.

The molding board I found to be most satisfactory. The children crowded around it as I tried to shape the different bodies, guessing at what they were, at the same time giving the definitions which they could then see before them in actual land and water. Crude as these lessons were, they gave great pleasure to the children and made impressions which conquered all the old uncertainty and stumbling.

Then we commenced the map lessons, beginning of course with the United States.

Taking up for the first lesson the map questions on the New England States, capitals, locations of cities, descriptions of rivers, etc., were appointed for study hour work. But before the lesson was studied each name was written on the black-board, and carefully articulated by each child. I found this most necessary, for if by any chance the lesson was omitted, the pronunciations the next day were apt to be something remarkable. After the group of States had been gone over in this way we took up the descriptive part. The language at first was quite beyond the children, so I told them what I thought would interest and be useful to them.

Thus, group after group was gone over, and little by little the language of the book was taught them until they had a fair enough understanding to study the descriptive part also, directly from the book. Now they always read this to me and I explain what is difficult and talk over what is interesting, telling them, if possible, bits of personal experience in connection with the subject, or else

they tell me something they have seen in the newspapers or in books. Every once in a while we stop and review; sometimes by the usual written questions, sometimes I ask for a written description of a place, and at other times by a game of which the children are very fond. (The game here illustrated.) I have been asked again and again how far the lessons are orally conducted. I want especially to answer that question now. In geography, I have treated these children exactly as I treated my hearing classes. Some of the recitations have been oral and some written—about half and half, I think. The explanations and conversations over the descriptive geography have been almost entirely received through lip-reading, and I spoke before of the children reading the lessons to me. So the greater part of the work is oral. Through it all I have watched most carefully the articulation, often marking down a child for a mispronounced word, carelessly forgotten or neglected; for this is the one great, important feature of our work and needing the greatest care. All day long and through every study the articulation of each child must be closely watched and corrected if we would make a success of oral work. One thing that I have tried to avoid in this branch is the filling of the children's minds with names of innumerable insignificant places which they will never hear of outside of the school-room. This sort of thing might be well enough for memory training, but to take the time of a deaf child, whose every moment needs to be filled only with that which will tend to make it more natural and better able to mix with the people of the world, seems to me not only useless but wrong.

When geography develops a child's interest in newspapers and books and starts a spirit of inquiry, then and then only has the time given to it been profitably spent.

HISTORY.

By Miss Constance E. Newton.

I feel much more like listening quietly to all that others may say on this subject, for I don't believe that I have yet found the right way to teach it. But as I have been asked to say something I will try to give an outline of what has been done in the class.

Last year I gave the children easy outline sketches of the different historical scenes, beginning with Columbus and taking them as far as the Revolution.

This year it was thought they were sufficiently advanced to study from books. History after history was looked over to find one somewhat within their range, in language. At last one was selected and until Christmas time we struggled on in it. The words were simple enough, but the book was filled with figures, which were most difficult to explain to the very literal mind of the deaf.

The history lessons became merely hard language lessons, the children lost all interest and were rapidly forgetting what they had known. At last the book was thrown aside and I went back to the manuscript lessons. Beginning once more at the very beginning of things, giving a general idea of the world in the fifteenth century, then taking up Columbus and so on. I gave a more detailed account than I had the year before and made the language far more difficult. The history lessons have really been a combination of history and language study. In preparing the lessons I have made it a point to bring four or five new words on expressions into each lesson. On giving a new lesson, I had the class come before me and read what I had written. Each child in turn reading aloud two or three sentences. The rest were expected to follow as any hearing child would. If they lost the place they were passed over, unless a child was too near sighted to read the lips, then either the child next or I showed the place. I seldom had a book myself as I found it easier to detect errors in the articulation without one.

After every two or three sentences I added a few words of explanation and when the reading was over the children picked out the unfamiliar words and I wrote them on the blackboard where they stayed for a week or two, others being gradually added. At another period the class was taught how to use them.

The recitations in history have for the most part been written as I considered this a more helpful and quicker way of teaching them how to express themselves. A lesson that was written in the same words that I used was generally rubbed out. I insisted on their using their own words also in avoiding a repetition of words. Some of the recitations, however, have been oral and they have frequently played a game which has been quite helpful to them.

I have heard history condemned as being of little use to the deaf. On the contrary, I have found it one of the most important and useful of the studies, because it brings before the children words, acts and scenes which they should be familiar with and which would be difficult to teach them without a history.

We are ambitious to have them read the papers, but how can they if they know nothing of warfare and war terms, of trade, emigration and government. They may understand the horrible parts, but we would have them elevate not lower their minds.

I have noticed a marked improvement in the reading-matter of the childrdn this year, and I attribute it almost entirely to their study of history. Instead of telling of murders and thefts as formerly, they have of their own accord followed the famine trouble in Russia, told me of the fever brought into this country by the immigrants, been interested in any outbreak, and other such items. Or if in their walks they have seen a statue or picture of some general or war scene they have come and told me about it with great pleasure.

The past and the present are very strongly linked and we must not keep them ignorant of the past if we would have them understand the present. This understanding of the present, is to my mind, the chief value of history and not the memorizing of dates and names.

CONVERSATION.

By Miss Elsa Hobart.

During the early months of the past year I have followed this plan in two conversation classes. On Mondays the pupils have brought newspaper facts about current events into the class, and have been encouraged to bring the newspaper clippings if possible. In this way, they have gained information about the Columbian Exposition, about the training of Indians as soldiers, about Whittier's birthday and such matters. Clippings considered valuable have been preserved in a scrap-book.

On Tuesdays the pupils have read short descriptions from my lips, writing just what they understood. I remember telling them about sponges in this way.

The exercise on Wednesdays was a written conversation between two pupils upon a topic which I had selected for them.

On Thursdays one pupil was required to relate some fact or incident briefly and then the others questioned him to elicit further information. If the question and answer were correctly constructed, the pupil was not asked to write it; if it were doubtful it was written by the pupil, corrected and then learned by him.

On Fridays we answered any questions that we found in the question bag. Each pupil was expected to put at least one question

into the bag during the week. On Fridays they were read and answered if possible by either pupils or teacher. If it were necessary, the matter was left to be looked up in encyclopædias or elsewhere. Pupils were expected to ask questions for information. I remember such as these: "Who invented electric cars?" "When were lamps first used?"

During the last few months I have followed a different plan, depending largely, however, on the previous work. A pupil has been allowed to stand before the class and tell about anything that he chose, provided only that it was entirely upon one subject. The other pupils watched his lips and were expected to tell something of what was said. I recall now some of the topics selected by the pupils: an abstract of a story read at home; a description of the flood near the Mississippi River, obtained from the newspapers; an account of a fire at a school where a friend was boarding; an account of a journey; of a base-ball match; of a visit to a friend; of a party; of a picnic, etc.

I will now ask the pupils to give such an exercise. I had given them no previous instruction for this lesson, except that they were to think of what they wished to say. This morning I reminded them that it would come to-day and was surprised to be told by one that he meant to talk about Paul Revere and by another that she wished to tell about Sir Walter Raleigh. I told them that I did not wish to know upon what subject they had decided and suggested to Edith that people might think she could talk about nothing but history. Whether they have changed their minds since morning I do not know.

OMISSION.

On Friday, July 8, there were read reports from the following schools:

The Kentucky Institution, by W. K. Argo; the Pennsylvania Oral School, by Miss Mary B. C. Brown; the Alabama Institute, by Miss Mary McGuire; the New Jersey School, by Mr. Weston Jenkins; the Ontario Institution, by Miss Margery Curleke; the Protestant Institution, Montreal, by Mrs. Harriet E. Ashcroft; the Warren Articulation School, New York City, by Miss Lilly E. Warren; the Rhode Island School, by Miss L. De L. Richards; the Albany Home School, by Miss Anna M. Black; the Maryland School, by Miss L. C. Yerkes.

The following report of receipts and expenditures by the Entertainment Committee was submitted:

RECEIPTS.

Dr. A. G. Bell	$132 00
Mr. L. S. Fecheimer	25 00
Mr. J. A. Gillespie	15 00
Member of the Association	5 00
Miss Jennie Lippit	3 00
Miss J. A. Foley	1 00
Miss E. L. Holmes	1 00
Mrs. J. G. Mitchell	1 00
Miss L. E. Warren	1 00
Member of the Association	2 00
Excursion Subscriptions	66 75
	$252 75

EXPENDITURES.

Stereopticon	$13 44
Colored fire	8 00
Lunch for Excursion on July 4th	35 00
Excursion on July 4th	65 00
Acrobatic performance	2 00
Punch and Judy show	31 00
Magician	50 00
Fireworks	25 00
Japanese Lanterns	6 00
Games for the children	6 44
String party for the children	2 46
Postage and telegrams	2 95
Express charges	1 85
	$249 14
Total receipts	$252 75
Total expenditures	249 14
	$ 3 61

ADELIA C. FAY,
Chairman Com.

NAMES, ADDRESSES, AND CERTIFICATE NUMBERS OF MEMBERS

OF THE

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

JUNE 15, 1893.

‡Subscribing Members. ‡ Honorary Members. ‖ Life Members. † Original Promoters. *Deceased.

ADAMS, MISS IDA H., (79)
Teacher Horace Mann School for the Deaf, Boston, Mass.

ADAMS, MISS MABEL E., (353)
Teacher Horace Mann School for the Deaf, Boston, Mass.

ALLEN, MISS A. C., (126)
256 Benefit Street, Providence, R. I.

ALLEN, MISS MARY A., (105)
American Asylum for the Deaf and Dumb, Hartford, Conn.

ANAGNOS, DR. M., (338)
Principal Perkins, Institution for the Blind, South Boston, Mass.

ANDREWS, MR. E. R., (180)
455 Exchange Street, Rochester, N. Y.

ARGO, MR. W. K., (153)
Kentucky Deaf Mute Institution, Danville, Ky.

*ASHCROFT, MR. J. I., (161)

†ASHCROFT, MRS. HARRIET E., (160)
Superintendent Mackay Institution for the Deaf and Dumb, Montreal, Canada.

ATWOOD, MISS LOIS E., (162)
Teacher Alabama Institution for the Deaf, Talladega, Ala.

AYCOCK, MR. B. F., (205)
Tremont, N. C.

BAILEY, MISS LOTTIE, (324)
90 Magnolia Street, Boston, Mass.

BAGLEY, MISS AMY C., (21)
Portland School for the Deaf, Portland, Me.

BAKER, MISS ABBY T., (186)
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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

OPENING EXERCISES

PRAYER AND REMARKS

BY

BISHOP J. H. VINCENT. D. D.,

VALEDICTORY

OF

EX-PRESIDENT DR. ALEXANDER GRAHAM BELL,

INAUGURAL ADDRESS

BY

PHILIP G. GILLETT, LL. D.,

PRESIDENT,

REMARKS BY

EDWARD M. GALLAUDET, LL.D.

ROCHESTER:

WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES

1894.

HARVARD COLLEGE
JUN 25 1897
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OPENING EXERCISES

PRAYER AND REMARKS

BY

BISHOP J. H. VINCENT, D. D.,

CHANCELLOR OF CHAUTAUQUA.

FOURTH SUMMER MEETING OF THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.
HEADQUARTERS, HOTEL ATHANAEUM, CHAUTAUQUA, N. Y.

OPENING EXERCISES.

According to published notice the American Association to Promote the Teaching of Speech to the Deaf met at 10 A. M., in the large Amphitheater of the Chautauqua Assembly.

Chancellor John H. Vincent, taking his position at the reading desk in front of the audience, said : "Let us invoke the divine blessing :—

Eternal God, King of kings, Lord of lords! our Father who art in heaven, we approach Thee reverently this morning, seeking the presence of Thy Spirit, that as we seek the truth, we may find the truth ; that our lives may by it be ennobled and enlarged, and our efficiency in this world in every good work be increased. We pray that the blessing of Thy Holy Spirit may be upon the members of the organization that meets here and now for deliberation. May their work be advanced by all wise methods, and may they remember, and may we all remember, in connection with the schemes that enlist our thought, attention and enthusiasm that, "except the Lord build the house, they labor in vain that build it; that except the Lord keep the city, the watchman waketh but in vain." We thank Thee for the privilege of serving Humanity. We pray that we may with reverent and unselfish love in all possible ways serve our fellow-men. And in our work wilt Thou grant Thy guidance and inspiration! We ask this grace in the name of Jesus Christ, the Redeemer of man. Amen.

After reading a brief Scripture lesson from the Gospel of Luke, chapter iv., verses 13–22, Chancellor Vincent addressed to the Association the following

WORDS OF WELCOME.

It is my duty and privilege in behalf of Chautauqua to extend to you, and to the Association here represented, the hearty greetings of Chautauqua; to assure you that you are very welcome to this place, this grove, these buildings, and to our fellowship.

Chautauqua represents every movement which aims to lift up Humanity. As you will learn before you leave us, if you have not already learned it, nothing is foreign to us that pertains to Humanity. Your work, limited in a sense, is, however, so large and so worthy, that the very mention of its objects starts the Chautauqua fervor in our hearts.

We believe in miracles. We are sound to the core on the doctrine of miracles. We believe in another realm than this, a realm spiritual and invisible, a realm however of Law and Force. And we do not believe in miracles in any such sense as would render it necessary to violate the laws of the lower realm in order to carry out the purposes of the higher. We believe that once in a while the powers of that realm invisible (of which we are all always a part), break into this realm visible, and their force spiritual, produces phenomena in the realm material which the realm material left to itself could never produce. We call these phenomena 'wonders,' 'signs,' 'miracles.' Jesus, of whom the prophets spoke, and who himself in Nazareth, his own town, quoted the words of the prophet Isaiah while 'the eyes of the people were fastened on him," came into this world to make the world better, to give sight to the blind, to give hearing to the deaf, to give speech to the dumb, to give life to the dead, to give bread to the hungry, and to preach the gospel to people who had never heard the gospel,—the 'good tidings' of hope and eternal life.

He did some wonderful things. He fed the multitude. I do not know how we feed the multitude now. Here is the grain. How it came, I do not know. We put it into the soil. What happens to it, I do not know. When we come to the last analysis of it, out of the few handfuls of grain, that we throw into the earth, there comes enough to feed 5,000, and twelve baskets-full left afterwards. That is according to the Law of Nature. But who knows what the invisible process is or what the atoms are at the beginning of this process? Jesus came down from the heaven to earth and performed the same miracle, only he then did it immediately with the five loaves and the two fishes feeding the 5,000, and of the fragments afterwards gathered, there were basketsfull. And there is no more miracle in the one than in the other, only He who knows the process which you call 'Natural,' produced effects directly according to laws that prevail in the spiritual world.

Now we take an interest in you, because while you do not feed people by miracle, you make people who are dumb, in a sense by miracle to speak, and people who are deaf, by miracle to hear. So that the old prophecy is fulfilled and the work of the Christ is in a way perpetuated ; and back of the visible process by which speech is given, there is a responsive spiritual faculty which makes it possible to do these things in a marvellous way, so that you, with all your psychological and physiological knowledge, are not yet quite able to tell how it is done, yet it *is* done. And but for Christianity it would never have been done. And 'greater works' than Christ wrought are being wrought through Christ in the world. We exalt the Christ. We read Renan, but we find more in Christ than Renan found. We read the same four gospels that he read, and 'the fifth gospel' that he glorified, and we believe in the Acts of the Apostles. Therefore we seek in every possible way to make men wiser and better. And we are therefroe glad beyond all our power of expression to welcome you here. The success you have already achieved points to the successes that lie as possibilities beyond you.

I therefore, in behalf of the authorities of Chautauqua, bid you welcome. We have a full program. I suppose you have enough to keep you busy all the while. And there are many things going on while you are busy. And the work of to-day is nothing as compared with the work of this day a week hence.

A good woman here a few years ago from Minneapolis writing home to a friend, said, "I am afraid to go to sleep at night for fear I shall miss something that happens while I sleep.' And just as, in hotels, you must not attempt to take in the whole bill of fare, so you must not attempt to take the whole Chautauqua bill of fare from the beginning to the end. And I wish you all wisdom in your selection, and great success in your attempt. (Applause).

Dr. PHILIP G. GILLETT said: "Bishop Vincent, Chancellor of Chautauqua and the Chautauqua System; we appreciate very highly your words of welcome. We also appreciate very highly the privilege of meeting in this great, world-renowned, educational center. It is not necessary that I multiply words upon this point. Our presence here, when we have turned our backs upon Niagara, and upon other wonderful works of Nature, as well as upon beautiful places built by the art of man, that

we might come to Chautauqua to hold our Fourth Summer Meeting, speaks for itself. We are now inaugurating the opening of the Fourth Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf.

The Third Meeting of the Association was held last year in Chicago during the World's Fair. The Second and the First Summer Meetings were held at Lake George, New York. The Association was organized four years ago in the City of New York. The progress of its work has been quiet, but it has been effective. It is a work essentially in the spirit of Chautauqua, a work, as you say, to uplift humanity; a work to make men better, and to bring men more nearly into communion and association with one another than they had been before. It is essentially founded upon the Fatherhood of God and the Brotherhood of Man.

At the First Meeting in 1890, Dr. Alexander Graham Bell, who was chiefly instrumental in the foundation and in the organization of the Association, was elected its President. One year ago he resigned. There has been no opportunity since that time of hearing, what we might call, Dr. Bell's Valedictory. They are not his parting words. He has simply entered into a relation to the Association which, we think, will be more active, probably, than the one he occupied before. And while he gives his Valedictory sentiments, let us all understand that he is by no means bidding us "good bye." We have a great deal of work remaining for Dr. Bell to do. I have the pleasure of introducing to you Dr. Alexander Graham Bell, the First President of the American Association to Promote the Teaching of Speech to the Deaf. (Applause.)

VALEDICTORY

OF

EX-PRESIDENT DR. A. GRAHAM BELL.

VALEDICTORY.

President Gillett, Ladies and Gentlemen:—

It has been my desire from the first to see this Association which I look upon as my child, and of which I am proud, go along without my help ; that instead of being at the helm I might fold my arms and look on and see the work prosper and grow. The Association has grown. The work goes on, and the best proof of the wisdom of the selection of the new President is to be found in the paper of Statistics of Speech Teaching during the past year, which I have placed in your hands. For, surely, never before in the history of America has there been such a growth in Articulation Teaching, never before have so many deaf children been given the power of speech and the ability to understand the speech of others. So that I feel that it is well for the Association that I resigned its Presidency into the hands of Dr. Gillett.

There were various reasons that led to this change, one of which was that a misconception has been aroused in the public mind concerning the objects and the scope of this Association. For a hundred years the advocates of the Oral Method of instruction and of the Manual or Sign Method have been waging friendly warfare with one another. They have vied with one another as to which could do most good to the deaf. In our own country, the Oral Method made its appearance only a little over twenty-five years ago, in 1867. But the establishment of the first oral school —the Clarke Institution,—was looked upon as a hostile movement, opposed to the system of education that had been for fifty years employed in this country. Now this Association is not hostile to anything. This Association has been confounded in the public mind with the oral method of teaching. It is distinct. It is neutral. It takes no part in the contest between methods of instruction. It stretches out a helping hand to schools of all

sorts, whether Oral, Sign, or Manual Alphabet. It desires to promote simply the teaching of speech to the deaf, however done.

Is there any one in America, or in the world, who would not wish to give speech to a deaf child if he could? There are no teachers who do not desire speech for the deaf, and that all the deaf should use their speech. Where then does a difference come in? It is not in relation to teaching speech; it is in relation to giving up the older methods of instruction. The advocates of the Oral Method insist that in order to teach speech to the deaf, the Sign language must be given up; spelling on the fingers must be given up; all these instrumentalities that the good men of our profession in the past have adopted must be abandoned. It is that that arouses antagonism. Now this Association does not ask the teacher to give up anything. We ask oral teachers, sign teachers, manual alphabet teachers, auricular teachers, all who have the interest of the deaf at heart, to teach as they deem best, but to give every deaf child a chance to learn to speak and to encourage him to use his speech.

As I say, the Oral Method and the Manual Method have been opposed to one another. And it was not until 1886 that a true platform was reached upon which all teachers of all methods could meet as friends. The Convention of American Instructors of the Deaf, which met in California in 1886, passed unanimously a resolution recommending that all deaf children, whatever might be the method employed in their general instruction, should have an opportunity of learning to speak. Upon that platform all teachers can stand as friends. This recommendation, proposed by Dr. E. M. Gallaudet, unanimously adopted by the profession,—by both manual and oral teachers,—forms the platform of this Association.

In 1890, at the next Convention of American Instructors, an examination of the Statistics of Articulation teaching was made to see how far this resolution had been carried into effect. This resolution recommended that earnest and persistent endeavors to teach speech and speech-reading to every deaf child should be made in every school for the deaf. But the statistics for 1886 and 1887, show, as you will see from the Percentage Chart, page 24, the line marked 2, the percentage of pupils taught speech fell off very greatly following the California Convention; and it is evident that the resolution had not been carried into effect; and *yet all teachers* agreed that it was desirable to teach speech to

all the deaf, if they could. It was thought that the difficulty would be remedied by the organization of an association to promote the teaching of speech to the deaf,—an outside Association in no way connected with conflicting methods,—that would hold out a helping hand to all who desire to teach speech to the deaf, but would not promote one method of instruction as against another. And this organization came into existence.

If you examine curve No. 2 on the Percentage Chart, following January, 1890, the date of our organization, and note the persistent rise in the percentage of pupils taught speech, you will see that our Association is accomplishing a great work. The percentage of pupils taught speech has steadily increased since the organization of this Association. In 1890 only 41 per cent. of our pupils had a chance to learn speech, while to-day 54 per cent. have this privilege. And the numbers are large. On the 15th of November, 1893, there were 8,304 deaf pupils in all schools for the deaf. Of these 4,485, or 54 per cent., were receiving instruction in the use of their vocal organs.

The policy adopted by this Association, which has proved of special value in promoting the teaching of speech to the deaf is non-interference with the methods of instructing the deaf, keeping clear of the question of the general education of the deaf while seeking to promote the teaching of speech to the deaf. How? First, by collecting and publishing statistics; second, by furnishing printed descriptions of methods of teaching speech to the deaf; third, and most important of all, by the holding of summer meetings which shall not be in the nature of conventions devoted to disputation and controversy over the excellencies of different methods of instructing the deaf; but shall partake of the nature of summer schools where our members can come and give and receive instruction, and where we can learn from one another, not as to which is the best method of teaching the deaf, the Sign or Oral Method, but how to teach speech better. We come together for information not for controversy.

Such has been our policy. The Association has grown until it includes in its ranks not only a considerable portion of the profession of instructors of the deaf, but a large number of persons interested more or less closely in the instruction of the deaf, including the parents and friends of pupils who have been taught to speak

The time came, I felt, that the Association should go on without my leadership. The only difficulty was as to my successor. I had long been anxious to lay down the reins. I had been anxious to find some one who would carry on this work on the impartial basis on which it was started ; and it seemed that a special Providence had been concerned in the selection of our friend, President Gillett. We all know of the political revolution which disrupted the institution that was built up by Dr. Gillett until it had become the largest school for the deaf in the world, and the pride of the State of Illinois. When we met in Chicago, we learned that Dr. Gillett was disengaged, and we knew we had found the man we wanted. I resigned my position and our Vice-President, Mr. Hubbard, and Mr. Crouter, went in almost fear and trembling to see whether we could secure his services. I felt the Association wanted a man who could devote his whole time to it, visiting the schools, and by his personal influence increase the interest in the cause ; a man who could show schools that this Association is impartial, that it is not going to promote a warfare of methods, but has peace and goodwill for all.

Dr. Gillett has occupied a peculiar position in reference to our work. Before I ventured to suggest his name as President of this Association, I thought it well to examine his past attitude towards articulation work ; for every one knows that Dr. Gillett is a sign man, a believer in the value of the Sign language. He and I have had many a battle on that same question. We have been pitted against one another in Illinois and other places on that point. He is an advocate of signs and I am opposed ; and I could see that the election of such a man would emphasize, as nothing else could emphasize the harmony of methods in this new Association, and that it stood on solid ground. I felt that the selection of Dr. Gillett would convince the teachers of the manual schools that this Association would not be unfriendly to them. But how about the teachers of the oral schools? Do they want an advocate of the Sign Method as the President of this Association? No, not if its purpose were to promote the Oral Method of teaching. We, however, do not want that. But as this is a neutral Association to promote the teaching of speech by any means, all that they want is to be sure that Dr. Gillett's attitude toward articulation teaching is sincere.

Now what has his attitude been? Let us go back to the time when articulation teaching was first introduced into this

country; when every one of the older teachers was against it; when it was thought a wicked thing, almost, to try and imitate the miracles of Christ, and give speech to the deaf. What was his attitude then? I am deeply interested in this period of the history of articulation work, because I have a personal interest. The little girl whose deafness led to the establishment of articulation teaching in this country is now my wife; and I have, therefore, a special interest in looking back to the time when the first move was made. And to the father of this little girl, the Hon. Gardiner G. Hubbard, our first Vice-President, is largely due the fact that the Clark Institution, at Northampton, was established. It was he who persistently urged the Massachusetts Legislature to establish an oral school in that state; and we have him with us to-day on our Board.

When his daughter lost her hearing, at the age of four and one-half years, Mr. Hubbard found that there was no school in America where his daughter's speech could be retained; for, of course, a little child of four and a half years could talk. The teachers of the deaf, whom he consulted, unanimously stated that the speech of this little girl would soon be forgotten; that it would die away; she would become a deaf-mute. It was no use trying to save the speech of one so young, and the best they could do would be to resign her to her fate, and have her taught by manual methods. Horace Mann, however, had been in Germany and reported in Massachusetts on the success of articulation teaching in Germany. Mr. Hubbard, as a member of the Board of Education of Massachusetts, always interested in educational matters, was intensely interested in the news that in Germany such children as his could have their speech retained and be taught to read from the lips. And so it came about that the parents of this child refused to treat her as deaf and dumb; they determined to speak to her as if she could hear, to direct her attention to the movements of the mouth and to encourage her to speak; putting off manual methods until after she should in fact become dumb, which she never did. She learned to understand from the movements of the lips, and a private teacher was employed, who is with us to-day, Miss True, who was the second articulation teacher in America, Miss Rogers only antedating her. It was soon demonstrated that, for such children as she, the Oral Method was a success. Mr. Hubbard determined that a school should be established in America for the benefit of children who, like his daughter,

had lost their hearing after having learned to speak, and for the benefit of such children as had partial hearing. He doubted whether it was practicable in a very large proportion of cases to teach speech to the congenitally deaf. But when application was made to the Massachusetts Legislature for a charter it was opposed by the older schools and for several years the establishment of the Clark Institution was defeated; largely by the influence of the Hon. L. J. Dudley, who was Chairman of the House Committee on Appropriations. He had a child who was born deaf and he *knew* that a child born deaf could not be taught to speak. It was, therefore. useless to establish such a school.

What did Mr. Hubbard do? He and Mr. Sanborn and Dr. Howe stood shoulder to shoulder, determined that if the Massachusetts Legislature would not start a school, it should be started privately, and Miss Rogers was induced to open her little school in Chelmsford, in 1864. Then Mr. Dudley, when he visited this little school in Chelmsford, asked whether Miss Rogers thought his daughter could be taught to speak. She replied that she did not know, as the child was born deaf, but added, "If you like, send her and we will see." He did so. And when Mr. Dudley returned to Miss Rogers's school, a short time afterward, he was greeted with words of welcome from his own daughter. She greeted him with the word "Father," and spoke to him in audible speech.

It need not be said that when the bill again came up in the Legislature Mr. Dudley was its warm advocate. The bill was passed, and Mr. Clarke of Northampton endowed the Institution. And Mr. Dudley who was its persistent opponent, is now the President of the Board of the Clarke Institution of Northampton.

After strenuous efforts, the Oral Method was thus established on American soil in 1867. This was taken as a hostile act toward the existing methods of instruction, and on that ground it led to a call for a conference of principals of other institutions. The call issued March 28, 1868, reads:—

"The increased interest, manifested by the public during the past year in the education of the deaf and dumb, taking in certain localities the form of hostility to the system of instruction successfully practiced in this country for half a century, has led the officers of this Institution * to consider the present an opportune time for the assembling in conference of those best fitted by practical experience and long study to judge what measures and methods will most conduce to the welfare of the deaf and dumb of our country."

What did Dr. Gillett do? He went straight to Northampton, to Miss Rogers, and said, "I want to see what you are doing. I want to examine your work carefully and impartially without allowing my mind to be prejudiced by my experiences." He made a careful and full examination of her work, and went to Washington to the conference and defended the Clarke Institution. He was one of the two or three who had a good word to say for the teaching of speech at the Clarke Institution, which was not represented at the conference. He gave a helping hand to articulation work. He introduced into his own school articulation teaching, having for his first teacher Miss Trask, whom we all knew as one of the best and most successful of articulation teachers, and whose memory we honor and revere.

What has his attitude been at other periods? Look where you will, you will find it is consistent from first to last. It has been that of a fair, liberal-minded man, anxious to introduce into his own school whatever seemed to be good for the deaf.

I can well remember when I came to this country for the first time,—to introduce my father's system of Visible Speech into the Boston, Hartford, and Northampton schools. Dr. Gillett heard of this young man who had appeared in America, and of this system of teaching speech to the deaf. He posted off from Illinois right up into the heart of Canada, in mid-winter, and sought me out at my father's house, in a country place four miles from the town of Brantford, and found out about this new thing, which he at once introduced into his school. Mr. Lyon comes with his Phonetic Alphabet, and Dr. Gillett is one of the first actively to favor it. And I may say that though Dr. Gillett is not an advocate of the Oral Method as opposed to other methods, his mind is liberally-disposed towards articulation teaching, and he is to be trusted in this great work. The proof that no mistake has been made is seen in the statistics which are presented for consideration.

In 1892, the *Annals* takes account of the Oral Method. With regard to the New England States, we have statistics from the very foundation of oral work. "Curve No. 4" shows the percentage of pupils in the New England States taught wholly by the Oral Method. In 1868, one year after the Clarke Institution was opened, it was only 12 per cent. You will see that there has

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*The Columbia Institution.

been a steady, continuous increase, or progress, since then, interrupted by a slight fall in 1876, the cause of which I do not know, until November 15, 1893, when 67 per cent. of the pupils in the New England States were taught wholly by the Oral Method. This method has spread from the New England States as a center, and influenced the other States. The influence on the country at large is marked. We have no statistics previous to 1891, when Prof. J. C. Gordon,* of the National College for Deaf-Mutes, published the number of pupils in America taught wholly by the Oral Method, and it amounted to 10 per cent. In 1892 (*Annals* Jan., 1893), the percentage had risen to nearly 20 per cent., and since then, in 1893, the per cent. has risen up to 24.07; so that to-day nearly one-quarter of the deaf children in the schools for the deaf in the United States are not only taught speech but receive their education by the Oral Method.

In Canada, little change has occurred so far as shown by statistics. We have for 1892 and 1893 (line 6 in the Percentage Chart), a stationary condition of affairs. The dotted lines show the percentage of pupils receiving instruction in the use of their vocal organs. Line 1 shows the percentage for the New England States; it rose to pretty nearly 90 per cent. but since has fallen to 87.6 per cent. The line 2 shows the progressive attitude of articulation teaching in the United States. That is a very interesting curve, and if you project the dotted line into the future, and suppose that there is to be as great increase in the future as there has been to the present time, it will not be long before this Association will have accomplished one mission, one of the main objects of its existence, every deaf child in American schools for the deaf will have had an opportunity to learn to speak. At present, only 54 per cent. are taught speech, but this is a great improvement upon previous times. That "curve" is to be relied upon. The "curve" No. 3 for Canada is not to be relied upon, except in its general feature, a steady increase in the number of pupils taught articulation. But the total number of pupils taught in Canada is small, and the statistics imperfect. For a number of years the Fredericton Institution and the Montreal Catholic Female Institution made no returns. And this year the returns for the Catholic Male Institution are imperfect. The omission of

* Preface to "Education of Deaf Children," issued by the Volta Bureau.

such a large institution as the Catholic Female Institution, for instance, materially affects the statistics of the condition of educational work in Canada.

Now, in conclusion, I should like to point out what has been the policy of this Association in the past; where I think its strength lies; and what I should like to see the policy of the Association in the future.

The success of this Association as a friendly organization; friendly to all schools and all methods of instructing the deaf, has been due, I think, to its occupying neutral ground; to its avoiding as a subject of discussion the different methods of teaching the deaf, and to its omission of discussion and controversy at all its summer meetings. This is its strength. In this way we have avoided the controversies that in the past have separated those who are engaged in the same noble work. By avoiding these subjects, and by bringing all together on neutral ground, by making the teachers of different methods acquainted with one another personally, we have promoted friendly relations between them. By showing resultant pupils, and by actual practice-work in a practice-school we have helped all teachers of articulation to better knowledge of their work, to see for themselves how the deaf are taught to speak in the schools where most satisfactory work has been accomplished. Now I think that the policy of avoiding the general subject of education, and limiting ourselves to the promoting of teaching speech to the deaf, should be continued in the future.

We have had an important proposition presented to our notice by the Executive Committee of the Convention of American Instructors of the Deaf. This convention, recognizing in us a friendly relation, has made the suggestion through its Executive Committee that we no longer limit ourselves to the work that we have had in the past,—promoting the teaching of speech to the deaf,—but that we cover the whole subject of the education of the deaf, and become an association to promote the general education of the deaf.

That proposition should be very carefully considered. At first I was inclined not to consider it at all. And then I came to the conclusion that it was too important a matter, that it must receive great care and great thought, which has been given to it by the Board of Directors of our Association. They felt it too important a subject to decide at one meeting, so put off the decision to a second meeting, and then decided that it is

inadvisable at least at present. By our Constitution we are bound to co-operate with the Convention of American Instructors of the Deaf. If we enlarge our scope, to cover the general education of the deaf, we take the ground occupied by that body, to which we hold a friendly relation. I think that wants to be considered with very great care. I think it premature. If we adopt such an action as that, it means the extinction of that friendly body. It means that the Convention of American Instructors will no longer exist ; its Conventions will no longer be held.

Now I think that the decision of the question of the existence or non-existence of the Convention, that has had a long and noble place in the instruction of the deaf in this country, is not a matter for us even to consider until the Convention itself has its discussion on the question of its own existence. There has been no discussion of the subject at a meeting of the Convention. As a matter of courtesy even, I think it would be well for us to postpone any action, or change of our policy, until after the Convention has held another meeting, and has itself decided whether it is or is not advisable.

In regard to this "overture" for union, there is another difficulty that demands our careful consideration. When this Association was started, it was as an organization simply and purely to promote the teaching of speech to the deaf, a limited and special subject. It possesses an endowment fund consisting of the original donation of $25,000 and of life membership fees. This fund was given for a specific object, which is to promote the teaching of speech to the deaf. If we should change the character of our organization, what becomes of this fund? Is it to be used for general or specific purposes? It is manifest that before we can consider such a proposition we want to look at the Constitution and see what guarantees that affords, and also to the laws of the State of New York under which its charter was granted, that whatever happens to this Association the fund shall remain perpetually for the purposes for which it was originally donated.

So far, the subject has simply been discussed by the governing bodies of the Convention and the Association. This whole matter should be looked into with care, and I hope that the decision of the Association will be, for the present, at least, to

keep this Association simply and purely as an Association to Promote the Teaching of Speech to the Deaf, and make its relation to the Convention, or any other association, that may replace that Convention, as cordial and friendly as the relation between this Association and the Convention has been in the past. (Applause.)

I. STATISTICS OF THE NEW ENGLAND STATES.

Date.	Number of Pupils.			Percentage of Pupils.	
	Total Pupils.	Taught Articulation.	Taught Wholly by the Oral Method.	Taught Articulation.	Taught Wholly by the Oral Method.
1868	304		38		12.4
1869	320		41		12.8
1870	370		76		20.5
1871	387		95		24.6
1872	409		119		29.1
1873	418		138		33.0
1874	411	Statistics wanting.	147		35.8
1875	437		168		38.4
1876	443		162		36.7
1877	471		199		42.3
1878	466		204		43.8
1879	483		228		47.2
1880	476		243		51.1
1881	479		246		51.4
1882	484		260		53.7
1883	498		269		54.0
1884	520	343	289	66.0	55.6
1885	512	348	287	68.0	56.1
1886	500	366	293	73.2	58.6
1887	508	405	304	79.7	59.8
1888	501	418	322	83.4	64.3
1889	531	450	339	84.7	63.8
1890	529	460	343	86.9	64.8
1891	564	506	365	89.7	64.7
1892*	504	447	334	88.7	66.3
1893*	524	461	351	87.6	67.0

* Figures refer to number of pupils present November 15th.

II. STATISTICS OF THE UNITED STATES.

Date.	Number of Pupils.			Percentage of Pupils.	
	Total Pupils.	Taught Articulation.	Taught Wholly by the Oral Method.	Taught Articulation.	Taught Wholly by the Oral Method.
1884	7,482	2,041	Statistics wanting.	27.2	
1885	7,801	2,618		33.5	
1886	8,050	2,484		30.8	
1887	7,978	2,556		32.0	
1888	8,372	3,251		38.8	
1889	8,575	3,412		39.7	
1890	8,901	3,682		41.3	
1891	9,232	4,245	963†	46.0	10.4
1892*	7,040	3,924	1,581	49.4	19.9
1893*	8,304	4,485	2,056	54.0	24.7

* Figures refer to number of pupils present November 15th.

† Ascertained by Professor Joseph C. Gordon. See Introduction to "Education of Deaf Children," published by the Volta Bureau.

III. STATISTICS OF CANADA.

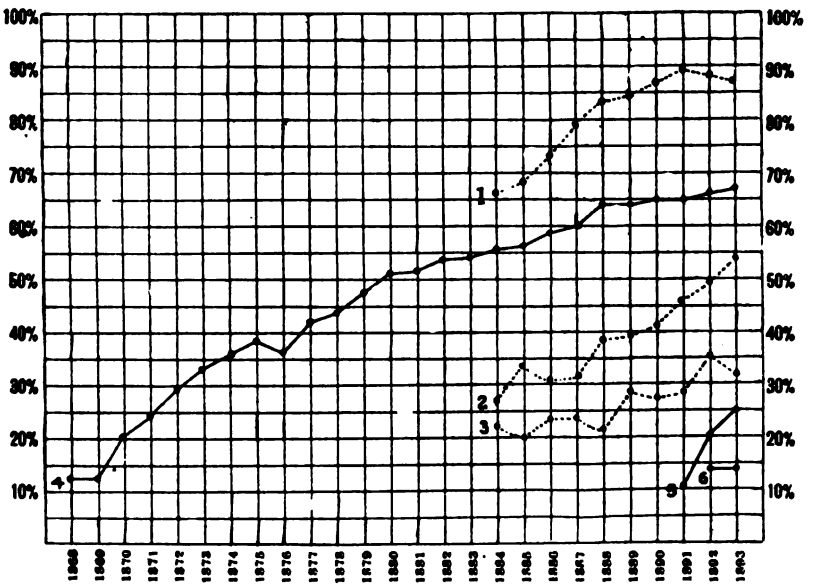
Date.	Number of Pupils.			Percentage of Pupils.	
	Total Pupils.	Taught Articulation.	Taught Wholly by the Oral Method.	Taught Articulation.	Taught Wholly by the Oral Method.
1884	747	164	Statistics wanting.	22.0	
1885	722	145		20.1	
1886	732	175		23.9	
1887	724	172		23.8	
1888	735	158		21.5	
1889	682	197		28.9	
1890	586	162		27.6	
1891	793	229		28 9	
1892*	682	244	97	35.8	14.2
1893*	748	239	107	32.9	14.3

* Figures refer to number of pupils present November 15th.

IV. GROWTH OF SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF,

GRAPHICALLY SHOWN.

PERCENTAGE CHART.



1. Percentage of pupils in the New England States receiving instruction in Articulation
2. Percentage of pupils in the United States receiving instruction in Articulation
3. Percentage of pupils in Canada receiving instruction in Articulation
4. Percentage of pupils in the New England States taught wholly by the Oral Method
5. Percentage of pupils in the United States taught wholly by the Oral Method
6. Percentage of pupils in Canada taught wholly by the Oral Method

Statistics of Speech Teaching for 1893, concerning New Pupils admitted during the year, compiled from replies to a circular letter of inquiry sent to Superintendents and Principals of American Schools for the Deaf, by A. G. B.

State or Territory.	Town.	School number in the *Annals* list Jan. 1894.	Name of School.	New Pupils Admitted School year 1893-4.				Percentage.		
				Total New Pupils.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.
Alabama	Talladega	21	Alabama Institute	16	8	4	0	50.0	25.0	
Arkansas	Little Rock	28	Arkansas Institute	39	9	3	4	23.0	7.7	
California	Berkeley	22	California Institution	20	17	0	0	85.0		
Colorado	Colorado Sp'gs	36	Colorado School	20	19	10	4	95.0	50.0	20.0
Connecticut	Hartford	1	American Asylum	30	18	0	0	60.0		
Connecticut	Mystic	B1	Whipple Home School	4	4	4	0	100.0	100.0	
District of Col.	Washington	20A	Columbia Institution							
		A	Kendall School	13	11	0	0	84.6		
		B	National College	16	16	0	0	100.0		
Florida	St. Augustine	52	Florida Institute	—	—	—	—			
Georgia	Cave Spring	11	Georgia School	18	7	0	0	38.8		
Illinois	Chicago	37	Chicago Day Schools							
Illinois	Chicago	B6	Ephpheta School	6	5	0	0	83.3		
Illinois	Englewood	B5	M'Cowen Oral School							
Illinois	Jacksonville	10	Illinois Institution							
Indiana	Evansville	55	Evansville Day School	3	0	0	0			
Indiana	Indianapolis	7	Indiana Institution	32	9	1	0	28.1	3.1	
Iowa	Council Bluffs	18	Iowa School	38	28	12	0	73.7	31.6	
Iowa	Dubuque	B10	Eastern Iowa School	0	0	0	0			
Kansas	Olathe	23	Kansas Institution							
Kentucky	Danville	4	Kentucky Institute	40	32	17	0	80.0	42.5	
Louisiana	Baton Rouge	14	Louisiana School							
Louisiana	Chinchuba	B13	Institution of the Holy Rosary	9	4	0	0	44.4		
Maine	Portland	42	Portland School	8	7	0	0	87.5		
Maryland	Baltimore	B4	Knapp Institute	6	6	6		100.0	100.0	
Maryland	Baltimore	35	Maryland School for Colored	6	3	0	0	50.0		
Maryland	Frederick City	29	Maryland School	12	12	0	0	100.0	100.0	
Massachusetts	Beverley	45	New England Industrial School	3	3			100.0		
Massachusetts	Boston	31	Horace Mann School	15	15	15	0	100 0	100.0	
Massachusetts	Northampton	27	Clarke Institution	24	24	24		100.0	100.0	
Massachusetts	West Medford	B9	Sarah Fuller Home	4	4	4	0	100.0	100.0	
Michigan	Flint	16	Michigan School	68	42	8	0	61.7	11.7	
Michigan	North Detroit	B2	German Lutheran Institute	13	13	13	0	100.0	100.0	
Minnesota	Faribault	25	Minnesota School	34	25	4	0	73.5	11.7	
Mississippi	Jackson	17	Mississippi Institution							
Missouri	Fulton	13	Missouri School	36	6	1	0	16.6	2.8	
Missouri	St. Louis	B7	Mariæ Consilia Institute	11	8	3	0	72.7	27.2	
Missouri	St. Louis	44	St. Louis Day School	3	3	0	0	100.0		
Missouri	South St. Louis	B15	St. Joseph's Institute	14	7	2	1	50.0	14.3	7.1
Nebraska	Omaha	30	Nebraska Institute	31	30	11	19	96.8	35.5	61.3
New Jersey	Hammonton	B16	Peet Private School	1	1	0	0	100.0		
New Jersey	Trenton	49	New Jersey School	24	24	12	0	100.0	50.0	
New Mexico	Santa Fe	53	New Mexico Asylum	5	0	0	0			
New York	Albany	B11	Albany Home School	4	4	4	0	100.0	100.0	
New York	Buffalo	24	Le Couteulx St. Mary's Institution	20	19	13	0	95.0	65.0	
New York	Fordham	32	St. Joseph's In. for Imp'd Instruct'n	24	24	24	0	100.0	100.0	
New York	Malone	51	Northern N. Y. Institution	7	7	3	2	100.0	42.8	28.6
New York	New York	2	New York Institution	71	71	5	0	100.0	7.0	
New York	New York	26	N. Y. Instit. for Imp'd Instruct'n	18	18	18	0	100.0	100.0	
New York	New York	B14	Warren Articulation School	6	6	6	0	100.0	100.0	
New York	New York	B8	Keeler Articulation Class	2	2	2	0	100.0	100.0	
New York	Rochester	41	Western N. Y. Institution	9	9	0	0	100.0		
New York	Rome	38	Central N. Y. Institution	16	15	9	0	93.7	56.2	
North Carolina	Raleigh	9	North Carolina Institution							
North Dakota	Devil's Lake	59	North Dakota School	6	2	1	0	33.3	16.6	
Ohio	Cincinnati	56	Cincinnati Oral School	4	4	4	0	100.0	100.0	
Ohio	Cincinnati	39	Cincinnati Public School							
Ohio	Cincinnati	B12	Notre Dame Female School	3	2	1		66.6	33.3	
Ohio	Cleveland	63	Cleveland School	16	0	0	0			
Ohio	Columbus	5	Ohio Institution	62	23	7	4	37.2	11.3	6.4
Ohio	Toledo	60	Toledo School							
Oregon	Salem	34	Oregon School	10	5	0	0	50.0		
Pennsylvania	Edgewood P'k.	40	Western Penn. Institution	18	12	2	0	66.6	11.1	
Pennsylvania	Philadelphia	3	Pennsylvania Institution	63	63	63		100.0	100.0	
Pennsylvania	Philadelphia	62	Home for Speech Training	15	15	15		100.0	100.0	
Pennsylvania	Scranton	48	Pennsylvania Oral School	13	13	13	0	100.0	100.0	
Rhode Island	Providence	43	Rhode Island Institute	12	11	11		91.7	91.7	
South Carolina	Cedar Spring	12	South Carolina Institution	16	0	0	0			
South Dakota	Sioux Falls	46	South Dakota School	8	3	0	0	37.5		
Tennessee	Knoxville	8	Tennessee School	24	24	4		100.0	16.6	
Texas	Austin	19	Texas Asylum	40	10	9	1	25.0	22.5	2.5
Texas	Austin	58	Texas Institution for Colored	7	5	2	0	71.4	28.5	
Utah	Salt Lake City	50	Utah School	9	9	3	0	100.0	33.3	
Virginia	Staunton	6	Virginia Institution	11	8	0	0	72.7		
Washington	Vancouver	54	Washington School	8	7	0	0	87.5		
West Virginia	Romney	33	West Virginia School	7	4	4	0	23.5	23.5	
Wisconsin	Delavan	15	Wisconsin School	37	17	17		45.9	45.9	
Wisconsin	La Crosse	57	La Crosse Oral School	0						
Wisconsin	Milwaukee	47	Milwaukee Day School	10	10	10		100.0	100.0	
Wisconsin	St. Francis	B3	St. John's Catholic Institution							
Wisconsin	Wausau	61	Wausau Oral School	2	2	2		100.0	100.0	
			Total	1210	844	406	35	69.7	31.5	28.9

Statistics of Speech Teaching for 1893 in detail from the *Annals*, Jan. 1894, with calculated percentages.

State or Territory.	Town.	Number of the School in the *Annals*.	Name of School.	No. of Pupils present Nov. 15, 1893.				Percentage.		
				Total Pupils.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.
Alabama	Talladega	21	Alabama Institute	55	24	12	0	28.2	14.1	0.0
Arkansas	Little Rock	28	Arkansas Institute	141	20	10	4	14.2	7.1	2.8
California	Berkeley	22	California Institution	154	78	0	0	50.6	0.0	0.0
Colorado	Colorado Sp'gs	36	Colorado School	81	59	16	12	72.7	19.7	14.8
Connecticut	Hartford	1	American Asylum	147	95	0	0	64.6	0.0	0.0
Connecticut	Mystic	B1	Whipple Home School	19	19	19	0	100.0	100.0	0.0
District of Col.	Washington	20	Columbia Institution							
		A	Kendall School	47	42	0	0	89.1	0.0	0.0
		B	National College	61	57	0	0	93.4	0.0	0.0
Florida	St. Augustine	52	Florida Institute	41	37	10	0	90.2	24.4	0.0
Georgia	Cave Spring	11	Georgia School	104	20	0	0	19.0	0.0	0.0
Illinois	Chicago	37	Chicago Day Schools	47	46	1	0	98.0	2.1	0.0
Illinois	Chicago	B6	Ephpheta School	112	112	0	0	100.0	0.0	0.0
Illinois	Englewood	B5	M'Cowen Oral School	36	36	36	0	100.0	100.0	0.0
Illinois	Jacksonville	10	Illinois Institution	475	180	67	0	37.9	14.1	0.0
Indiana	Evansville	55	Evansville Day School	13	0	0	0	0.0	0.0	0.0
Indiana	Indianapolis	7	Indiana Institution	262	105	13	0	40.0	5.0	0.0
Iowa	Council Bluffs	18	Iowa School	270	46	24	0	17.0	8.8	0.0
Iowa	Dubuque	B10	Eastern Iowa School	5	0	0	0	0.0	0.0	0.0
Kansas	Olathe	23	Kansas Institution	251	58	0	0	23.1	0.0	0.0
Kentucky	Danville	4	Kentucky Institute	198	117	52	0	59.1	26.2	0.0
Louisiana	Baton Rouge	14	Louisiana School	74	15	0	0	20.2	0.0	0.0
Louisiana	Chinchuva	B13	Institution of the Holy Rosary	32	25	0	0	78.1	0.0	0.0
Maine	Portland	42	Portland School	40	40	40	0	100.0	100.0	0.0
Maryland	Baltimore	B4	Knapp Institute	26	26	26	0	100.0	100.0	0.0
Maryland	Baltimore	35	Maryland School for Colored	21	0	0	0	0.0	0.0	0.0
Maryland	Frederick City	29	Maryland School	88	60	22	0	68.2	25.0	0.0
Massachusetts	Beverley	45	New England Industrial School	26	15	0	0	57.7	0.0	0.0
Massachusetts	Boston	31	Horace Mann	99	99	99	0	100 0	100.0	0.0
Massachusetts	Northampton	27	Clarke Institution	131	131	131	0	100 0	100.0	0.0
Massachusetts	West Medford	B9	Sarah Fuller Home	9	9	9	0	100.0	100.0	0.0
Michigan	Flint	16	Michigan School	311	94	26	0	30.2	8.3	0.0
Michigan	North Detroit	B2	German Lutheran Institute	42	42	42	0	100.0	100.0	0.0
Minnesota	Faribault	25	Minnesota School	223	99	37	0	44.4	16.6	0.0
Mississippi	Jackson	17	Mississippi Institution	81	20	8	0	24.7	9.9	0.0
Missouri	Fulton	13	Missouri School	297	68	10	0	26.3	3.4	0.0
Missouri	St. Louis	B7	Mariæ Consilia Institute	43	37	0	0	86.0	0.0	0.0
Missouri	St. Louis	44	St. Louis Day School	24	23	0	0	95.8	0.0	0.0
Missouri	South St. Louis	B15	St. Joseph's Institute	13	7	1	0	53.8	7.7	0.0
Nebraska	Omaha	30	Nebraska Institute	127	78	44	34	61.4	34.6	26.8
New Jersey	Hammonton	B16	Peet Private School	1	1	0	0	100.0	0.0	0.0
New Jersey	Trenton	49	New Jersey School	111	70	32	0	63.1	28.8	0.0
New Mexico	Santa Fe	53	New Mexico Asylum	9	0	0	0	0.0	0.0	0.0
New York	Albany	B11	Albany Home School	14	14	14	0	100.0	100.0	0.0
New York	Buffalo	24	Le Couteulx St. Mary's Institution	128	120	55	5	93.7	43.0	3.9
New York	Fordham	32	St. Joseph's In. for Imp'd Instruct'n	317	297	280	0	93.7	88.3	0.0
New York	Malone	51	Northern N. Y. Institution	89	51	23	0	57.3	25.8	0.0
New York	New York	2	New York Institution	334	334	15	13	100.0	4.5	3.9
New York	New York	26	N. Y. Instit. for Imp'd Instruct'n	194	194	194	0	100.0	100.0	0.0
New York	New York	B14	Warren Articulation School	10	10	9	1	100.0	90.0	10.0
New York	New York	18	Keeler Articulation Class	—	—	—	—	—	—	—
New York	Rochester	41	Western N. Y. Institution	159	157	0	0	98.7	0.0	0.0
New York	Rome	38	Central N. Y. Institution	132	90	0	0	68.2	0.0	0.0
North Carolina	Raleigh	9	North Carolina Institution	146	20	18	0	13.7	12.3	0.0
North Dakota	Devil's Lake	59	North Dakota School	29	13	2	0	44.8	6.9	0.0
Ohio	Cincinnati	56	Cincinnati Oral School	20	20	20	0	100.0	100.0	0.0
Ohio	Cincinnati	39	Cincinnati Public School	8	0	0	0	0.0	0.0	0.0
Ohio	Cincinnati	B12	Notre Dame Female School	14	12	5	0	82.8	35.7	0.0
Ohio	Cleveland	63	Cleveland School	24	0	0	0	0.0	0.0	0.0
Ohio	Columbus	5	Ohio Institution	383	117	23	11	30.5	6.0	2.9
Ohio	Toledo	60	Toledo School	—	—	—	—	—	—	—
Oregon	Salem	34	Oregon School	45	17	0	0	37.7	0 0	0.0
Pennsylvania	Edgewood P'k.	40	Western Penn. Institution	189	64	14	0	33.9	7.4	0.0
Pennsylvania	Philadelphia	3	Pennsylvania Institution	462	262	262	0	56.7	56.7	0.0
Pennsylvania	Philadelphia	62	Home for Speech Training	29	29	29	0	100.0	100.0	0.0
Pennsylvania	Scranton	48	Pennsylvania Oral School	48	48	48	0	100.0	100.0	0.0
Rhode Island	Providence	43	Rhode Island Institute	53	53	53	0	100.0	100.0	0.0
South Carolina	Cedar Spring	12	South Carolina Institution	85	26	9	0	30.6	10.6	0.0
South Dakota	Sioux Falls	46	South Dakota School	45	12	0	0	26.6	0.0	0.0
Tennessee	Knoxville	8	Tennessee School	171	137	15	0	80.1	8.8	0.0
Texas	Austin	19	Texas Asylum	214	39	39	0	18.2	18.2	0.0
Texas	Austin	58	Texas Institution for Colored	38	8	5	0	21.0	13.1	0.0
Utah	Salt Lake City	50	Utah School	47	35	10	0	74.5	20.2	0.0
Virginia	Staunton	6	Virginia Institution	79	27	0	0	34.2	0.0	0.0
Washington	Vancouver	54	Washington School	53	21	0	0	40.4	0.0	0.0
West Virginia	Romney	33	West Virginia School	93	14	14	0	15.0	15.0	0.0
Wisconsin	Delavan	15	Wisconsin School	183	57	57	0	31.1	31.1	0.0
Wisconsin	La Crosse	57	La Crosse Oral School	6	6	6	0	100.0	100.0	0.0
Wisconsin	*Milwaukee*	47	Milwaukee Day School	42	42	42	0	100.0	100.0	0.0
Visconsin	*St. Francis*	B3	St. John's Catholic Institution	36	21	0	0	58.3	0.0	0.0
Visconsin	*Wausau*	61	Wausau Oral School	8	8	8	0	100.0	100.0	0.0
			Total	8301	4485	2056	80	54.0	24.8	1.0

CANADIAN SCHOOLS.

State or Territory.	Town.	School number in the *Annals*.	Name of School.	Number of Pupils present November 1893				Percentage.		
				Total Pupils.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.
Manitoba	Winnipeg	C7	Manitoba Institution	40	6	0	0			
Nw. Brunswick	Fredericton	C6	Fredericton Institution	22	2	0	0			
Nova Scotia	Halifax	C3	Halifax Institution	63	30	6	0			
Ontario	Belleville	C4	Ontario Institution	257	48	0	0			
Quebec	Montreal	C1	Catholic Institution (Male)	117	60	0	0			
Quebec	Montreal	C2	Catholic Institution (Female)	201	93	93	0			
Quebec	Montreal	C5	Mackay Institution	48	?	8	0			
			Total	748	239	107	0	31.9	14.3	0.0

CANADIAN SCHOOLS.

State or Territory.	Town.	School number in the *Annals* list Jan. 1894.	Name of School.	New Pupils Admitted School year 1893-4.				Percentage.		
				Total New Pupils.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.	Taught Speech.	Taught wholly by the Oral Method.	Taught wholly by Auricular Method.
Manitoba	Winnipeg	C7	Manitoba Institution	11	3	0	0	27.2		
Nw Brunswick	Fredericton	C6	Fredericton Institution	4	0	0	0			
Nova Scotia	Halifax	C3	Halifax Institution	8	5	1	0	62.5	12 5	
Ontario	Belleville	C4	Ontario Institution	42	12	0	0	28.6		
Quebec	Montreal	C1	Catholic Institution (Male)	20	15	0	0	75 0		
Quebec	Montreal	C2	Catholic Institution (Female)	50	50	46	4	100.0	92.0	8 0
Quebec	Montreal	C5	Mackay Institution	6	5	0	4	83.3		66.6
			Total	141	90	47	8	63 8	33.3	5.7

INAUGURAL ADDRESS

BY

PHILIP G. GILLETT, LL. D.,

PRESIDENT,

REMARKS BY

EDWARD M. GALLAUDET, LL.D.

INAUGURAL ADDRESS.

Ladies and Gentlemen, Fellow Workers in a great and good cause:—

It will not be expected, after the beautiful and exhaustive address of Dr. Bell our Ex-President, presented with his accustomed ability, that I should take time to inflict on you any extended remarks. I have been most happy to yield to Dr. Bell the time allotted to me by the committee on programme, and having done so and heard his address I am more than pleased that I was so inclined. However gratifying it would be to one's vanity to discuss before this audience, the question that calls us together, it would now be a work of supererogation, for Dr. Bell has so well covered the ground, as to leave very little remaining to be said; and I am sure that you will be better pleased to improve the time in reflection and personal intercommunication, than to listen to me. And yet with your forbearance I will indulge in a few thoughts. Dr. Bell with the courage of his convictions speaks from a full and sincere heart, after long study and earnest research. There are present men and women of equally courageous convictions who do not agree with the learned Doctor in some of his views, but no one who is himself sincere and is seeking the best possible means of advancing the welfare of the deaf—a class recognized as peculiar in all ages of human history—around whom the sacred writings in the dawn of revelation threw the protecting ægis of a Divine command, will fail to rejoice in any means that may forward the work we all have at heart. Every inhibition as "Thou shalt not." carries with it by implication its antithetical injunction "Thou shalt." The negative command given in the genesis of the human family "Thou shalt not curse the deaf" implies that there are positive duties and obligations due to these people that may not be omitted. This implied injunction is intensified by its context "But shalt fear the Lord thy God," which places it among the highest and most sacred religious duties. It closely associates the fear and love of God, with love and beneficence to man. The human race is a unit, a family, to no member of which are his fellows without some obligations. The only

pariahs are those who make themselves such by their unworthy demeanor. Never are they such by reason of some physical disability for which they are in no sense responsible. As the afflicted child in the father's house is the especial object of tender care and solicitude, so should the deaf be the especial care of that greater family, the State and Nation. Anything short of this will not meet the spirit of modern civilization. Such was not the spirit of the nations of antiquity. Even cultured Greece and Rome regarded the deaf as cursed of heaven. Far into the Christian era even, they were thought as beyond the pale of Divine mercy, so slow has the race been to acknowledge some of the highest rights of man. All are familiar with sporadic instances of mental advancement of deaf men presenting themselves through the ages—I believe that no such women are mentioned—but only within the memory of the grandparents of the present generation was the possibility of their general improvement recognized. The education of the deaf is one of the highest triumphs of Christian civilization. It is not at all strange that the best means of accomplishing a work which for more than fifty centuries had been universally believed impossible, should be the subject of much divergence of opinion and heated discussion. Every advance among men is attended with more or less of strife. This is true in material affairs such as inventions, discoveries, new applications of the forces of nature, et cetera. Priority of discovery and invention, has engaged much of the thought of men, and time of courts. How much more should we expect that concerning advances in the domain of mind and spirit development, there should be sharp and decided differences. Nor will this be regretted among men of breadth of mind who consider with candor the views of those differing from them, and with frankness acknowledge whatever excellencies their opinions and practice may possess.

The American Association to Promote the Teaching of Speech to the Deaf, recognizes the fact that in all the systems practiced in the education of the deaf there is merit. While none of them are perfect, and none have effected all that is desired, yet all have done well and are striving to do better. It asserts the sincerity and fidelity of all teachers of the deaf by whatever system they carry on their beneficent work, and seeks to co-operate with all alike, without interference with the practice of any. It is neither a sign, a manual, nor a pure oral association. Among its members and on its Board of Directors, are advocates and adherents of each of these systems. The Association is friendly to all, and says to all alike, "God bless

you in your well meant endeavors to prosecute the noble work in which you are engaged. By whatever way you can in your own judgement best effect the end in view, *press on*, but as far as possible give to the children entrusted to you a practical knowledge and use of speech and lip-reading, and we will lend you a helping hand whenever it is acceptable, yet always without interference or obtrusiveness." The honored names of earlier years, Gallaudet, Peet, Turner, Stone, Jacobs, MacIntire, Kerr and others it honors, and would not in the least distract from the credit due for the good work done by them. These were earnest men who made advances upon what was given to them, spent their energy and their lives in seeking some more excellent way, and died in the pursuit. Shall those who follow them be forbidden to advance upon their achievements? Shall no new methods or systems be given a candid hearing and fair experiment? I trow not. To repress these would be futile in this progressive age. The end is the paramount consideration. The means is secondary. The principle of the survival of the fittest asserts itself in most matters, and whether we will or not, will assert itself in this case also. To the names already mentioned future years will add others among which it is safe to predict will appear Harriet B. Rogers, Cornelia Trask, Emma Garrett, Alexander Graham Bell. Others might be mentioned now, but being still in the active arena it would be unseemly because their work is unfinished and it does not yet appear what advances may be made. I would not by this mention intimate that we regard Dr. Bell's work as nearly finished, for we all know that he is still one of the foremost workers in the cause he loves so well. His unselfish devotion to our work has ever been so true and marked, that to fail to mention his name in this connection would do violence to a sense of what is manifestly proper to every thoughtful individual. Notwithstanding he has done so much in his earlier and middle life in the interest of the deaf, we look for still more in his wiser and maturer years. To be doing something for the further welfare of the deaf amounts to a passion with him, which in the years to come will eventuate in still greater enterprises, and labors more abundant, though we hope less arduous.

On the twentieth of July, 1893, Dr. Bell, desiring to give more attention to other matters, without any abatement of his interest in the American Association to Promote the Teaching of Speech to the Deaf, resigned its Presidency. By action of the Board of Directors

I was on that date, elected, and accepted the position as his successor, the Association then being in session at the Chicago University, Chicago, Illinois, where it had convened because of its proximity to the World's Columbian Exposition. I assure you that I have a very high appreciation of the honor and responsibility of this position. It is one to which I never could have aspired. My thought from the incipiency of the Association had been that Dr. Bell should continue at its head during the years of his active life. I have constantly realized my insufficiency for this position. I entered on it with hesitancy because it made me the successor of one who is at once a scientist, inventor, and philanthropist. In which of these capacities future generations will regard Dr. Bell as most conspicuous, we cannot tell, but we may be assured that among the names of the most useful and beneficent of men will stand that of Alexander Graham Bell, the first President of the American Association to Promote the Teaching of Speech to the Deaf.

During the past year as President of our Association I have made a tour of the Institutions for the Deaf in the United States and Canada, my journey extending as far north as Manitoba and Nova Scotia, and south as far as Florida and Texas. I have personally seen the workers in the cause of deaf-mute instruction, by all systems; Trustees, Superintendents, and Teachers—and sometimes the officers of state governments. I am very happy here to state that they are an earnest, sincere and hard working class of persons, animated with a spirit of progress, coveting earnestly the best gifts, and seeking a more excellent way. Maintaining the wisdom of their methods from conscientious convictions, they are generally willing to prove all things while holding fast to that which is good. It is not claimed that all are equally successful in any particular. This could not be, because the conditions are too varied to make this possible. Yet with the means and appliances at command, zeal and energy are governing them day and night, Sunday and week day. They are everywhere in the van of educational movements in the communities and commonwealths where they reside. Yea more, the influence going out from the institutions for the education of the deaf has everywhere a stimulating effect on educational enterprises for other classes of people, so that parodoxical as it may seem, the public in lifting up these unfortunate ones gives to itself a greater uplift. This reactionary influence more than repays the public at large for all the financial outlay it has made.

One is pleased on such a tour of the institutions of this country to witness the deep interest of instructors in their pupils. An interest amounting to more than a perfunctory observance of certain routine services. In many, indeed in most cases, it is a sincere love. This sentiment is an impelling influence in the labor of the school-room, and in their planning, meditations, and consultations elsewhere and at other times. Their hearts, their minds, and their hands are united in this labor of love. They constitute a band of men and women who would do honor to any calling among men. Many have given themselves to this work with the devotion and earnestness of a crusader to the rescue of the holy land and sacred tomb from the Saracen and infidel. It is to be regretted that these devoted men and women too seldom meet with the financial encouragement they deserve. By whatever system pursued, the instruction of the deaf is a distinct profession, that can be acquired only by long practice in the schoolroom with the struggling pupil. No mere theorizer or *parvenu* should be left to conduct unaided and undirected the education of a company of deaf children. There is no department of life wherein the experience of those preceding, should be more fully taken advantage of, than in this peculiar field of education. Teaching while one of the highest sciences to be studied, is also one of the highest arts to be practiced. That to become thorough and successful in any department of instruction both study and practice are essential, has been shown through the history of the human family among those blessed with all their faculties. How much more essential must these be when the avenue through which the mind receives thought is one which in the economy of nature is not designed to be the only one so used. The obstacle that confronts the teacher of the deaf is one that in the present state of human knowledge cannot be removed, and the instructor must circumvent this by an ingenious quickening of the visual perception in certain directions. The eye in lieu of the ear, must still remain the heritage of the deaf whatever be the method we use in his instruction. This means a battle against nature that every teacher of the deaf must fight. If there ever was a case where the scripture's statement "the laborer is worthy of his hire" may be urged with emphasis, that of the teacher of the deaf is such. That scripture cannot be properly limited to the stipulated sum the teacher is compelled to accept, but includes honest earnings, richly deserved but too often withheld. I would that it came within the purview of this Association, to inaugurate some measure by which

adequate justice could be secured to the devoted teacher in this particular. There are institutions of limited means whose managers would gladly come up to the full measure of justice in the compensation of instructors, but there are others who might do better than they have done. Let us hope that there will be an advance along the whole line, in this matter, at no distant day. It is a reproach to any state or province in this land after requiring one's life to be devoted to its service in this arduous and exhaustive profession to withhold the few dollars per year, that would insure comfort, and justify expenses necessary to keep abreast of the times, and lay aside something for the proverbial rainy day, which too often accompanied by "the wolf at the door" comes with the certainty of time. Not infrequently the demagogue's cry economy, economy, economy, is the rankest extravagance, since it paralyzes skill and enervates earnestness, and extends the years of school life beyond the period when they might be terminated with profit. This cry sometimes comes from those who know least of the subject of which they speak, and with which they deal.

Besides inadequate compensation of teachers, there is another regretful circumstance often observable in our Institutions for the deaf, that is not only to be regretted but reprehended. This is the assignment of too many pupils (often poorly graded) to one class. The labor that daily confronts the teacher of such a class is appalling, and quite beyond the possibility of satisfactory performance. Only one who has passed through the experience, can appreciate the situation, here referred to. There is nothing like it in the work of the common school. Nowhere else is required so much individual instruction which from the nature of the case must be largely criticism and correction, as in the instruction of the deaf. This is not the time and place for the discussion of this wide spread error, but I venture this allusion to it with the hope of leading to its correction. It may be accounted for by a mistaken idea of economy, and by a sadly erroneous feeling of pride in the exhibition of a lower per capita cost of maintaining an institution than is shown elsewhere. This is a low ideal for it indicates how little is done by an institution for its pupils, rather than how well and how much is done for them. Such emulation is by no means to be commended.

A gratifying increase of interest in speech for the deaf has been observable of late years. Much of this is undoubtedly due to the influence of this Association. This increase is shown by the larger

number of pupils being taught speech and lip-reading, and the increasing number of instructors of speech, the more frequent inquiry for teachers competent to successfully impart such instruction, by the growing number of persons who are qualifying themselves for this work, by the interest the deaf themselves take in the subject, especially the younger deaf, large numbers of whom express a desire to be so instructed, and by the discussions on the subject in papers published in the interest of the deaf. It is true that some articles have appeared unfavorable to the work of the Association, but these tend to show that the activity of the friends of speech teaching to the deaf is arousing fresh and renewed attention. The discussion if not always conducted in the best taste, and occasionally characterized by personalities, is encouraging, as it shows that our cause is advancing and rising. The quiet pedestrian clad in moccasins passes unnoticed, but there is a commotion when a well mounted horseman on a fleet-footed courser rushes along. The subject to which the Association is devoted is of sufficient importance to have called out dignified and able articles pro and con. Doubtless many will yet follow. Let such discussion continue, until practical experiment and ample experience has settled the question of its utility and the extent of its practicability. Dignified, courteous discussion will only do good. One of the first essentials of becoming discussion is recognition of the sincerity of others who may differ from us however widely.

During the year past a friendly overture was made by the Executive Committee of the Convention of American Instructors of the Deaf, to the President and Directors of the American Association to Promote the Teaching of Speech to the Deaf, looking to a union of the two bodies. The Board of Directors gave the subject careful consideration and came to the conclusion that at the present time the union proposed is inadvisable. It is proper to state here that the Board of Directors of the American Association to Promote the Teaching of Speech to the Deaf entertain only the most friendly disposition toward the Convention of American Instructors of the Deaf, and consider that Convention a useful organization which the Board hopes will maintain a vigorous and healthy existence. In its good work the Board feel that this Association will do well to heartily co-operate. Much might be said as to the considerations that influenced the Board in arriving at their conclusion already referred to, but it is unnecessary at this time. The mutual co-operation of the two organizations

it is believed will tend to greater good for the deaf whose interests both seek to subserve.

We are assembled here in this great educational center, upon the shores of the beautiful lake, far above the usual haunts of men, in the midst of one of God's first temples, to consecrate ourselves anew to the noble work to which our lives have already been given, and to study together how our work may be best prosecuted. We are here from all parts of this great land, from beyond the St. John on the northeast and the St. Johns on the southeast, from the plains of Texas and the plains of Manitoba, and all the intervening country. Among us are adherents of all methods and systems of instruction, oral, manual, sign, auricular, and kindergarten. As to the best means of reaching the imprisoned mind and liberating from thralldom, to lead it forth among men, we have honest and decided differences; but we are all agreed, so far as we can without violence to our convictions, to devise better plans, and do our utmost to forward the work to which the Association that calls us here is devoted. We are not here to discuss the comparative merits or demerits of any system of instruction. This we relegate to another arena. We are agreed that there are three principal objects to be kept before all of us at all times in our work: the development of the mind; the training of the hand; and the impartation to our pupils of a ready means of intercourse with their fellow-men, which in the order of nature with the mass of mankind is through speech. To promote the last of these without detracting from the others is the object of our Association. To learn how best to effect this work is the purpose of our Summer Meeting at this time and place. This and cognate subjects we may properly consider. We are here at no small expense. Some of us at an expense we can ill afford. We have come for a good purpose. To fritter away the time of our meeting uselessly would be criminal. Let us each do our utmost to make the occasion of advantage to ourselves and to one another. Let the experienced and the expert, give to the younger of their abundant stores of information and knowledge. Let those seeking further light make free to ask all the questions they desire. Our lectures and practice lessons here will be of great profit and helpfulness, but the social opportunities we shall have will be of advantage also. Let us make the most of them that we may have the more to carry back to our pupils and our classes.

I sincerely hope that this Summer Meeting will be a bright event in our lives, that will equip all of us for greater usefulness

than ever before. I trust that the acquaintances here formed will be most pleasing and will ever remain among our delightful memories. The good Book says, "As iron sharpeneth iron, so a man sharpeneth the countenance of his friend." May this scripture be most completely fulfilled at this Fourth Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf, and may we and those who come after us, as well as our pupils and all who come after them, have reason for thankfulness because of the results of this delightful, harmonious, and profitable occasion.

MR. E. M. GALLAUDET: I rise, Mr. President, to offer a word of explanation which concerns the Institution over which I have the honor to preside. But before giving this explanation, I am glad of this opportunity to express my great pleasure concerning the breadth, catholicity and manifestations of friendliness toward all who are in the profession of educating the deaf, that have marked the addresses to which we have listened with so much pleasure, from our honored Ex-President and President.

MR. PRESIDENT: Dr. Bell in mentioning the Columbia Institution, at Washington, spoke of a certain hostility which was alluded to in the Call for the Conference of Principals in Washington in 1868.

In the fear that his remarks relating to that Institution and the Conference might give the impression that the Institution at Washington, and those who called the Conference, had a feeling of hostility toward the cause of Speech Teaching in this country, I beg leave to state two or three facts with regard to it and that Institution.

In March 1867, which was I believe before any oral school was practically established in this country, the Directors of the Institution at Washington sent their President to Europe to make an examination of the schools for the deaf, especially in the interesting matter of oral teaching; and in the report which the President made in October 1867, it was recommended that opportunities should be given to all deaf children to learn to speak. The Officers of the Columbia Institution called the Conference of Principals held in Washington in May 1868; and so far from entertaining any spirit of hostility to the method which was then

new in this country, they most heartily in that Conference seconded the action looking towards the rendering prevalent in all the schools of the country of the teaching of speech to the deaf.

I speak of this, Mr. President, simply for the purpose of calling the attention of the members of the Association to the attitude of the Columbia Institution at Washington with which I have had the honor to be connected; from that very genesis it has been friendly to the cause of speech-teaching. (Applause.)

After announcements of afternoon exercises, the Morning Session closed.

VI. 7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

HELEN KELLER: A PSYCHOLOGICAL STUDY

BY

REV. J. T. McFARLAND D.D.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES
1894.

HARVARD COLLEGE
JUN 25 1897
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some new joy, some fresh token of love from distant friends, until in the fullness of my glad heart, I cry 'Love is everything! And God is Love.

Helen Keller

July 12, 1894.

Tuscumbia, Ala.

HELEN ADAMS KELLER.

The eldest child of Major Arthur Henley and Kate (Adams) Keller, was born in Tuscumbia, Colbert County, Alabama, 1880, June 27. Her sister, Mildred Campbell, was born 1886, October 26; and her brother, Phillips Brooks, was born 1891, July 4. Major Keller was a paymaster in the Confederate Army, and held the office of U. S. Marshal under President Cleveland. He is an editor, and with his family resides in his native town, Tuscumbia, Ala. His wife, to whom he was married in 1878, is a native of Arkansas.

Helen's paternal grandfather, David Keller, was the son of Casper Keller, who came to America from Switzerland in the Colonial days of this country's history. Her paternal grandmother, Mary Fairfax Moore, was the daughter of Col. Alexander Moore of Rockbridge County, Va., who was aid-de-camp to Gen. Lafayette in the war of the American Revolution ; she was also a second cousin to Major-Gen. Robert E. Lee of Virginia.

Helen's maternal grandparents were natives of Massachusetts. Her grandfather, Gen. Charles William Adams, an eminent lawyer and judge, resided at Memphis, Tenn.; he was a brigadier-general in the Confederate Army. Her grandmother, Helen Everett, was a cousin to Hon. Edward Everett, and to Rev. Edward Everett Hale of Boston, Mass.

So far as is known, Helen had at birth all the faculties and senses possessed by any healthy child at that period of life; but at the age of eighteen months she had a serious illness, and on her recovery it was ascertained that she was totally deaf and blind. In 1887 she was placed under the instruction of Miss A. M. Sullivan, a young lady who had been educated at the Perkins Institution for the Blind, in Boston. Miss Sullivan proved to be one of the most expert of teachers; and, under her faithful instruction, this remarkable child developed with astonishing rapidity the marvellous genius which has since caused her name and fame to follow that of Laura Bridgman over the

world, to awaken the interest of scientists, and to establish for herself a place in the affectionate regard of every person who has been privileged to see her or to hear her speak. For Helen lives in days when great progress has been made in the art of teaching the deaf; when the deaf need no longer be dumb, as now they are taught to use speech, also to read it from the lips of others; and this wonderful child, blind as well as deaf, by means of a few lessons given her at her own request by Miss Fuller, the principal of a public school for the deaf where the oral method of instruction is employed, has acquired the free use of speech.

Major and Mrs. Keller have kindly furnished the items for the above sketch of their remarkably interesting little daughter.

With regard to Helen's acquisition of speech, Miss Fuller says: "She was an ideal pupil, for she followed every direction with the utmost care, and seemed never to forget anything told her. She had but ten lessons, yet in this short time she acquired all of the elements of speech, and combined them easily and naturally. At the close of her lessons she used speech fluently.

"Helen received her first lesson on the 26th of March, 1890; and on the 19th of the following month, while at the house of a friend, she gave orally an account of a visit she had made to Dr. Oliver Wendell Holmes.

"Her free use of speech on this day was very noticeable. She seemed conscious of the possession of a new power, and gave herself up to the full enjoyment of it. On her way home she remarked, 'I am not dumb now.'"

HELEN KELLER: A PSYCHOLOGICAL STUDY

BY

REV. J. T. McFARLAND, D.D.

OF

JACKSONVILLE, ILL.

HELEN KELLER: A PSYCHOLOGICAL STUDY.

I confess to not a little misgiving in attempting to discharge the duty assigned me on your program. Naturally I hesitate to speak before a body of specialists, myself being but a layman in relation to your noble profession. In the study of the mental life of the phenomenal child, Helen Keller, the accounts of whom have so deeply interested not merely the professional circles of those engaged in the work of instructing the deaf and the blind, I have felt myself to be most inadequately furnished with data to form the basis of anything deserving to be called a critical study. In the first place I have had no opportunity, execpt that afforded me during the past few days on these grounds, for any direct personal study of her mental characteristics, and absolutely no opportunity for any course of exact scientific observations and experiments necessary to the determination of many of the most interesting psychological problems involved in her case. And no such experiments, except in a limited way, so far as I know, have as yet been conducted by any one. It must appear to us all highly desirable that such observations and experiments be had as early as practicable, with the results carefully recorded, as a basis for the comparative study of her mental life in its succeeding stages.

As to her general mental characteristics, and the process of her mental development, and the pedagogical principles observed in the conduct of her education, the very fascinating sections devoted to her in several numbers of his annual reports by Mr. Anagnos, of the Perkins Institution, together with the remarkably intelligent accounts given by Miss Sullivan, who has been charged with the chief responsibility of the education of this extraordinary child, furnish most satisfactory and valuable material. These current accounts which, in deference to the public interest in this unique and wonderful case, and in view of the important bearing which her development sustains to the general

fields of education and mental science, will, I doubt not, continue to be given forth, will be impatiently waited for by an increasing number of people.

Helen Keller lost entirely, as the effect of a sickness, the senses of sight and hearing at the age of nineteen months. She has the advantage of an excellent ancestry, being descended upon her father's side from a virile Swiss stock, and upon the maternal side from that Puritan line, robust in body, intellect and conscience, represented by the New England Adamses. Her parents are superior people, physically vigorous and more than ordinarily endowed in mental and moral qualities ; and they have done everything possible to alleviate the condition of their unfortunate but most interesting child. The sickness which totally destroyed in Helen the senses of sight and hearing left her other senses unimpaired, and did not affect the native robustness of her health. These primary advantages must be considered in connection with the great disadvantages under which her mental development has taken place. It was her fortune, moreover, to be born late enough to reap the advantages of the great victories in the intellectual field to which her misfortune assigned her, achieved by Dr. Samuel Howe in the education of Laura Bridgman, an achievement in the intellectual and moral history of the race that will be held in everlasting remembrance. She has had, besides, directly, the advantage of the constant personal service during the seven years since her formal instruction began, of a teacher singularly fitted and trained for the delicate task of leading forth her mind from its two-fold prison. It is not difficult for us to believe that a far-seeing providence timed the coming into the world of this rare being with the preparations requisite for such a triumph in her of spirit over matter as shall forever give the world a higher notion or the divinely-imaged soul of man. Miss Sullivan, certainly, was remarkably equipped for the work to which it was her honor to be called. With a sympathy born out of her own experience of many years of almost total blindness, educated in, and graduating with distinction from, the institution made famous by the life-labors of Dr. Howe, she added to these general qualifications a course of most conscientious special study in preparation for her work after the call to it had come to her. Mr. Anagnos says of her, when he first informed her that the position of instructor to Helen would be

open to her if she would fit herself for its demands, that she "began immediately the work of preparation with great earnestness and unremitting application. She studied Laura Bridgman's case thoroughly in all its phases, perused voluminous books on mental development, read the reports of Dr. Howe with assiduous care, mastered his methods and processes in their minutest details, and drank copiously of his noble spirit and of the abundance of his faith in the efficacy of human capacities and innate powers for redemption and improvement."

Such were the antecedent conditions under which the education of Helen Keller began; of the history of that education we have just heard with kindling interest from the lips of her teacher, whose name will be indissolubly bound in distinguished and grateful remembrance with that of her phenomenal pupil.

In the study of a mind from which both sight and sound perceptions are cut off, it is very difficult for us to get upon grounds of mutual understanding. We are apt to forget that it is just as difficult, if not as impossible, for us to understand the thoughts of the blind and the deaf concerning facts which report themselves to us through the eye and the ear, as it is for them to understand us with regard to the same things. And language tends rather to mislead than to assist us to this understanding. The written and spoken languages of the world are the languages of the seeing and the hearing; there is no native language of the blind or the deaf. We find it very difficult often in the study of a foreign language to put ourselves at the mental view-point of the people whose language we are studying, so as to understand many of their words and phrases which have the coloring of the national mind. Many of these elements are utterly untranslatable from one language to another, though the translator may perfectly understand them. And there are some things so subtle in speech, so entirely the product of the intellectual and moral personality of the people to whom the language is native, that it is doubtful if any foreigner can ever grasp them. If this be true of those to whom knowledge comes through the common avenues of the five senses, how much greater must be the difficulty of mental understanding between those who have and those who have not the senses of sight and hearing? No people however widely separated from us by mountain and seas, can be so foreign

to us as those between whom and us lies the great sea of silence, brooded over by the starless night of blindness. As I have said, the blind and the deaf have no native language; they have no vocabulary through which they might communicate even among themselves the experiences and conceptions peculiar to their state, and which, if they could find proper embodiment in language, would be matters of easy comprehension among those whose consciousness responded to its content. These people, who neither see nor hear, are compelled to employ the language of the seeing and the hearing. It is impossible that they should express themselves through our vocabulary. They may use our words, but they may never know the meaning of many of those words to us, nor we their meaning to them. If we can imagine the discovery of an hitherto unknown island, whose inhabitants from the beginning never saw nor heard, and conceive of their having developed a language into which entered no element of sight or sound, we will be helped in the attempt to realize how widely different are the contents of the consciousness of those to whom the eye and the ear are closed, as compared with those who have these regal senses.

This chasm, however, is only complete and impassable between those having the full complement of the senses and those congenitally and completely deprived of one or more of them. I am convinced from the study of the mental history of Helen Keller that the experiences which came to her through the eye and the ear during the first nineteen months of her life have entered most importantly into all her subsequent mental development. It is unthinkable that the contributions of the senses of sight and hearing which came to her during those months were lost with the closing of the avenues through which they came. Nothing is ever lost out of the mind. The fact that she does not remember clearly what she saw and heard during those months of her infancy no more argues that they do not constitute a part of her mental organism than that the experiences which lie back of conscious memory with the rest of us have not entered into our subsequent development. None of us, any more than Helen, can remember much, if anything, of what we saw and heard during the first nineteen months of our lives: and yet we may not doubt for a moment that all our subsequently *constructed* knowledge rests upon that sub-conscious foundation.

Memory with the majority of people does not extend within the bounds of the first two years of life; with many it does not include the third year; and yet out of that *terra incognito* from which we have all come, but into which none of us may return again, we came forth with the knowledge of a multitude of things, with many complex perceptions and conceptions, with many judgments formed, with a sphere of consciousness already widely extended, and a world of things put in orderly arrangement to our thought. The mental life of one, as in Helen's case, into which the experience of nineteen months of seeing and hearing entered, must be fundamentally different as compared with that of one congenitally blind and deaf. I can understand how, as to educational methods, no distinction can be made between those congenitally deprived of one or more of their senses and those who lost them so early as to have no recollection of the experiences connected with them; but while pedagogy may not make any distinction between such cases, psychology must.

In Helen's case it seems clear to me that there are distinct indications that the experiences of those nineteen months have profoundly affected her whole mental life; that the light of those early days shining softly out of the depths underlying her consciousness has softened with an inner glow the otherwise rayless night of her blindness, and enabled her to construct conceptions of color and form impossible to one who never saw; and that the multitudinous sounds that entered her brain through the ear-gates before they were sealed in perpetual silence,—songs of birds, the orchestral symphonies of the insect world the laughter of children, the tender voice and cradle songs of a mother,—though in tones too faint and spirit-fine to be caught by the ear of conscious memory, have yet never died out in the inner chambers of her soul, and have enabled her to grasp, though never so faintly, some true conception of the harmony of sweet sounds. This sub-conscious and ante-memory period is to the individual mind what the prehistoric period is to the life of peoples. History is the memory of nations, and memory is the history of the mind. Out of the obscurity of the youth of the world, in which myths and legends were born, the great nations came at last into the clear light of history: but at the point at which history finds them they were what they were because of that submerged period of their existence of which history gives no account, and the characteristics and impulses received from that pre-historic period can be traced through all

the subsequent epochs of their progress. It is so likewise with the mind; and we must always take into account the impressions and impulses which it received in that early period which we cannot restore from memory's palimpsest.

There are several facts in Helen's history which sustain the view that her childhood seeing and hearing have enabled her subsequently to form conceptions of color and sound, and to construct visual images of things.

1st. Take, first of all, her own distinct testimony in the charming history of her life, "My Story," published in *The Youth's Companion*. She there says: "I have confused memories of long summer days filled with light, and the voices of birds singing in the clear sunshine. I remember, as it were yesterday, of being lost in a green place, where there were beautiful flowers and fragrant trees. I stood under one tall plant, and let its blossoms rest upon my curly head. I saw little flakes of light flitting among the flowers; I suppose they were birds, or, perhaps, butterflies. I heard a well-known voice calling me, but feeling roguish, I did not answer. I was glad, however, when my mother found me and carried me away in her arms." Of the sickness which resulted in the destruction of her sight and hearing, she says: "I still have confused memories of that illness."

If it is objected that these experiences were so early in her life as to render it improbable that she should remember them, two answers may be given: first, there are other thoroughly authenticated cases of memory extending back to the early part of the second year of life; and second, that the phenomenal memory which Helen has since manifested removes the incredibility of the supposition that what she here states is actual memory, and not imagination or the memory of things told her in later years. Her account of these recollections is perfectly consistent with the general testimony of consciousness concerning the first remembered experiences of a child. They are "very indistinct," they are "confused memories." But they are real memories, and being such, faint and confused though they are, they furnish the basis in her consciousness for the interpretation of sight and sound descriptions which are given her,—interpretations, we may be sure, very imperfect, but which, nevertheless, give her conceptions so far of the

reality of things, and contribute vastly to her mental posessions, and her emotional enjoyment.

2d. This view will enable us to understand what would otherwise be inexplicable, the vividness of her imagination in depicting scenes of external nature, and the intense enjoyment which she derives from descriptions of the beauties of the external world. Without any notion of nature as given us by sight, think you she could ever have conceived that fine poetic idea, when informed that hills encircled the spring where she and her friends were standing, that the hills were crowding about the spring that they might see their reflections in its waters? Sky, clouds, streams, trees, flowers, leaves rich with autumnal gold, birds flashing in the sunlight, all are pictured to her inner sense with a vividness that only the lingering light of her lost sight, I think, could make possible.

There is a mental phenomenon in connection with deaf-mutes which has an important bearing upon the theory concerning Helen for which I am here contending; namely, that in many instances, after they have received instruction and are put in possession of an adequate vocabulary, they remember and describe experiences lying back of the period when their instruction began, in some instances belonging to the very early years of their lives. Miss Fuller, of the Horace Mann School, has related to me within a few days, a remarkable instance of this kind which came under her own observation. I find also in Dr. Arthur Hartmann's book on "Deaf-mutism," page 15, the narration of a like instance, quoted by him from Kruse. It is as follows: "In the year 1805, a deaf-mute boy was found by the police wandering about Prague. As nothing could be got out of him, he was sent to a deaf-and-dumb institution where he was taught. When he was educated so far that he could give exact answers to questions put to him, he gave a description of what had happened to him in his former life. His father, he said, had a mill. Of the house utensils, and of the people he lived with, he gave a detailed description. He told a long story about his life there,—that his mother and sister had died, that his father had married again, that his step-mother had ill-treated him, and that he had run away. He knew neither his own name, nor the name of the mill, but he knew that it was situated in an easterly direction from Prague. Inquiries were set on foot and the

statements of the boy were confirmed. The police found his native place, gave him his name, and secured his inheritance.

Now the mind of the uninstructed deaf-mute is essentially in the condition of that of the child prior to its acquisition of language. Its memory consists simply of the impressions it has received from objects and experiences without any language by which, as yet, to construe or hold them in record. I give these instances to show the fact that the mind does retain, even from very early childhood, the memory of such impressions and experiences independently of language, and that subsequent mental development will bring out these apparently buried experiences, and enable the subject of them to embody them in words. This is the reverse of another most interesting and curious mental process to which I shall have occasion to allude in connection with Helen's mental history. In such cases as the ones just referred to, the mind remembers experiences, impressions and events, without terms or descriptive signs of any kind, and then afterwards revives them and clothes them, as with resurrection bodies, in subsequently acquired words. In the other case, directly to be described, the mind holds *words*, to it as yet empty of meaning, in submerged memory, and afterwards revives these words, and in-fills them with the *knowledge* subsequently acquired.

3d. But still more conclusive, as it seems to me, is the proof drawn from her *dreams*, that in the case of Helen the conceptions of sight and sound given to her in her seeing and hearing infancy still remain with her, though it may be for the most part in the sub-conscious chambers of her mind. The dreaming faculty is one of the most mysterious and wonderful powers of the mind, and through it glimpses are given into some of the subtlest secrets of the soul. In the dreaming state things which lie far beneath the surface of the waking consciousness often rise into the light, and latent and unsuspected powers are stirred into activity. Scenes long forgotten, and faces long buried in oblivion, are thrown with startling distinctness upon the dark background of the soul, and words heard only in the earliest years of childhood in the far-away fatherland, rise softly to the sleeper's murmuring lips.

In the Fifty-seventh Report of the Perkins Institution, issued September 30, 1888, about a year and a half after the

education of Helen was undertaken by Miss Sullivan, Mr. Anagnos made this record concerning her dreams: "Let me observe here, that Helen's dreams, like those of all other persons, are the result of the spontaneous action of her mental faculties. They are accurately modelled upon the experiences of her waking life, producing sensations similar in kind to those received in her state of consciousness, but without order or congruity, because uncontrolled by the will. Persistent inquiries have elicited the fact that light and sound are as completely absent from her dreams as they are from her eyes and ears. The last time that we ever questioned her closely as to whether she ever dreamed of seeing or hearing, she replied with emphasis, 'No! I am blind and deaf.' If this were all the testimony we had upon this point it would be very strongly against the theory that she retains a dim consciousness of light and sound from the brief period before she lost her two senses; for nowhere would we expect so confidently to find the evidence of such lingering consciousness and its entry into her conceptions as in her dreams. But we have another record of a most important character bearing upon this question. I quote from the Report of the First Summer Meeting of this Association, held at Lake George, July 1–10, 1891, page 191. It is from notes which were there read by Miss Fuller of a conversation between Dr. Bell and Helen, a conversation which took place about May 1, 1890, nearly two years after the record made by Mr. Anagnos in his report which I have just quoted:—

"Mr. Bell. Do you ever dream?

Helen. Yes.

Mr. Bell. What do you dream about?

Helen. About a very wonderful house. Last night I dreamed about a very funny house. It was shaped like an orange, and it was yellow. The beds were shaped like a pomegranate and the chairs were like balls with a flat seat. The tables were shaped like a triangle. (Helen illustrated by forming a triangle with her fingers.)

Mr. Bell. Were there any people in the house?

Helen. They did very queer things.

Mr. Bell. What?

Helen. They wore breast-pins on their shoes.

Mr. Bell. Did they talk to you?

Helen No, dear, I only thought about it. I was not one of them. There were some bangles on their heads and rings on their wrists.

Mr. Bell. How did you know they had rings on their wrists? Did you feel them?

Helen. No, I only dreamed I saw them in the window.

Mr. Bell. Do you mean that you saw them with your eyes?

Helen. Yes.

Mr. Bell. Were you on the outside of the house?

Helen. I passed it and looked in.

Mr. Bell. Were the curtains drawn?

Helen. No, and it was very light.

Mr. Bell. What were the people doing?

Helen. They were throwing handkerchiefs at each other and dancing. That was what they were doing. (Helen illustrated by action).

Mr. Bell. And were they talking?

Helen. No, they were making funny sounds. (Helen illustrated). Their eyes were slanting down.

Mr. Bell. Could they see?

Helen. There were five eyes. One was in the middle of the head, one on the nose, two were slanting, (illustrated as before) and one was (pointing to the bridge of the nose).

Mr. Bell. Do such people live in Boston?

Helen. No, it was only a story.

Mr. Bell. Was it a dream or a story?

Helen. Both."

The latter part of this account would indicate that it was a mingling of a night and a day dream; but it bears in its general features all the characteristics of a sleep-dream. Its grotesqueness is just such as often characterizes the visions that drift before the sleeping mind. This much seems clear, as drawn out by Dr. Bell's definite question, that it was a scene that presented itself not to her touch, which was then and is now her almost sole means of perception, but as a vision. It was a scene which her mind projected from itself, and from which she stood apart as a spectator. She insists that in her dream she saw these things,—a house, orange-shaped and yellow, beds like pomegranates, and people seen through a window dancing. We may not understand how this was possible, but it is presented to us simply as a fact.

But I do not consider it essential to this argument that we distinguish closely between her waking and her sleeping dreams. Enough that she has the marvellous mental faculty of picture making, of creating and throwing upon the canvas of her imagination scenes of beauty and sublimity. Permit me to quote one such of her day dreams, which will at once finely illustrate this inner vision which is the marvel of her mind, and, when we consider that it was written when she was but eleven years old, the almost incredible richness of her fancy and the wealth of her diction. Such dreams as this do not often come either in waking or sleeping hours to adult minds the most cultured, and few finer prose-poems can be found in literature:—

"Last night I dreamed that long, long ago, when the birds, and flowers and trees were first made, the great God who had created all things sat upon a beautiful cloud which looked like silver, and seemed to float in the midst of the blue sky like a throne; and he looked down upon the earth — the wonderful world he had made out of his own thought. Oh, how beautiful the world was! with her great mountains climbing upwards to the sky, and the valleys filled with sweet-smelling flowers and delicious fruit. The trees seeemed alive with beautiful things; the little birds' joyous songs made the air vibrate with music. I felt it in my dream. I knelt on the cool green moss that crept down to the edge of the merry little brooks, and I touched the water as it rippled past me. The broad, deep lakes were as quiet as sleeping babies, and I felt the ground tremble under my feet when the river went rushing past to join the stormy ocean. Then I went to the shore and put my feet in the water, and felt the waves beating against them continually; and God smiled, and the world was filled with light, and there was no evil, no wrong in all the world, only love, and beauty, and goodness. Just then I felt teacher kissing my lips and I awoke."

4th. But the fourth illustration of the peculiar and wonderful character of Helen's memory, is found in the "Frost King" incident. The history of that incident, I presume, is familiar to the most of you here present, but you will permit me to re-state it briefly, that I may point out its significance in relation to the psychological question I am discussing. Under date of November 4, 1891, when Helen was a little over eleven years of age, she sent to Mr. Anagnos, at the Perkins Institution, as a birthday-remembrance, a story which she entitled "The Frost King," a most remarkable composition in the beauty of its conception and the vividness and richness of its imagery. Mr. Anagnos published this story in the Sixtieth Annual Report of the Institution, and it excited the utmost surprise and admiration as the composition of a mere child, and she deprived of the senses of sight and hearing. But it soon transpired that this "Story" was an adaptation, and in large part an essential reproduction, of a story published in 1873, by Margaret T. Canby, entitled "Frost Fairies." After much inquiry the history of the matter was found to be this: In August, 1888, Helen was visiting at the home of Mrs. Hopkins, at Brewster, Mass. Miss Sullivan was for a time

absent from her pupil during her stay there, on account of impaired health, and Helen was left in charge of Mrs. Hopkins, who read to her frequently for her entertainment; and while neither Mrs. Hopkins nor Helen have any recollection of the story of the "Frost Fairies" having been included in those readings, Mrs. Hopkins had Miss Canby's book, entitled "Birdie and his Fairy Friends," which contained the story in question; and there can be no reasonable doubt that it must have been read to Helen at that time. But to this day she cannot remember ever having heard the story read, and testifies that her production of the "Frost King" had all the spontaneity of an entirely original composition.

Now let us see the elements involved in this matter: In the first place, at the time when the "Frost Fairies" must have been read to her, she had been under instruction not to exceed eighteen months. In February, 1887, when Miss Sullivan came to her, she did not so much as know that things had names. Remarkable as the progress was which she made in the acquisition of a vocabulary and the extension of her knowledge within the year and a half after her mental awakening took place, she could not possibly have understood, except most vaguely, this story when it was read to her by Mrs. Hopkins. Miss Sullivan testifies that Helen's vocabulary at that time was too limited to have made an understanding of the story possible. So faint was the conscious impression made upon her mind by its reading that she has never been able to recall its ever having been read to her at all. But three years and three months afterwards, that story, the mere words of which, to her without meaning, had dropped into her mind and been forgotten, rose like a brilliant dream, and she reproduced it, literally in large part, but with such additions and modifications as to surpass in richness of fancy and grace of diction even the beauty of the original. I do not think the records of mental science contain a more remarkable or instructive memory phenomenon than this. It was not simply the recollection of something once known and understood, recalled at last by a conscious effort of reproduction, or awakened by the law of association and recognized as having been previously received into the mind,—that, when we take all the conditions into the account, would have been a very remarkable achievement. But it was more than that: it was the holding in submerged memory words, about one thousand in number, which

when first given to her mind were for the most part wholly without meaning, holding them there for more than three years, and then, having in-filled them with meaning from accumulated knowledge, bringing them forth in rational order, not as treasures yielded up by the memory, but as the spontaneous product of the mind's own original creative energy. I lay special stress upon this feature, because I regard it as the most significant, that to an unusual degree she exhibits the power of reproducing in present consciousness impressions originally so faint as to make no consciously remembered record upon her mind; and not only so, but to fill in with meaning forms of knowledge which as originally received, were empty and meaningless.

And to me this greatly strengthens the supposition I have made, suggested by other facts, that having a memory of such a phenomenal order, she has carried with her into the darkness and the silence of her present state the conceptions of color and sound given her in infancy, prior to the sickness which deprived her of sight and hearing. Even if she did not testify, as she does, to faint memories of that sun-lit period in her life, and even if color and sound experiences had never occurred in her dreams, as in fact they have done, still, in view of the vividness with which her imagination depicts the forms and colors of the external world, and the keen delight which she receives from descriptions of nature, together with the revelation which the incident I have just been discussing makes of her marvellous power of sub-conscious memory, I should feel certain of the correctness of this supposition. And granting the correctness of this view, it will enable us to understand much that would otherwise be inscrutable in her mental operations.

With regard to Helen's religious ideas, there is nothing in them to distinguish her from others who have been instructed in the doctrines of Christian theism. She thinks of God, and trusts in Him with unfaltering confidence, as her Father, and of Jesus as his Son, who came into the world to manifest his love. It is profoundly interesting, however, to follow the history of her mind in relation to the great questions associated with religious faith. Up to February, 1889, when she was nearly nine years old, no one had ever spoken to her of God. Mr. Anagnos, sympathizing with the theory of Dr. Howe in relation to

Laura Bridgman, when Helen came under his observation, regarded her case, to quote his own words, "as a rare and most glorious opportunity for having one of the acutest and most brilliant of minds try to evolve the light of religious ideas from within instead of taking it from without, and form its conceptions of Deity and divine attributes in perfect freedom from external influence and authoritative bias." Dr. Howe, it is well known, was bitterly disappointed that his theory was not carried out in the case of Laura Bridgman, and Mr. Anagnos laments quite as deeply that what he regards as the natural development of the soul was defeated in the education of Helen. He says: "Thus again the old story of Laura Bridgman was repeated, and one of the finest and grandest intellectual and spiritual temples, which in its completion would have afforded extraordinary opportunities for scientific investigation and the discovery of truth in its simplest form was destroyed before the dome was finished." Not many will feel inclined to sympathize with Mr. Anagnos in this lament, with him, no doubt, entirely sincere; nor can anyone who considers the transparent simplicity of Helen's character, and the inspiration and calmness which have come to her through the conception of God and the universe into which she has been led, feel for a moment that her spiritual nature can justly be compared to a ruined temple. It impresses one rather as a most beautiful temple, filled with celestial light, and growing ever into fairer and larger proportions. I am wholly unable to appreciate the view that in order that the soul's development may be natural it should be left entirely to itself, without instruction in spiritual truths, or help to true conceptions of God and its own nature and origin. Why such a course with regard to the religious side of human nature should be regarded as "natural," while the whole science of education in relation to the intellectual nature demands exactly the opposite course, is to me inexplicable. Surely no good reason can be assigned why the spiritual nature should be left merely to *vegetate*, while the intellectual faculties are given the benefit of discipline and instruction.

Very early, however, and spontaneously, the intensely thoughtful mind of this child began to struggle with some of the great primary questions. "Where did I come from, and where shall I go to when I die?" And then, some time afterwards, she "demanded the name for the power, the existence

of which she had already conceived in her mind." She at. first seems to have been satisfied with thinking and speaking of the primary cause of things under the name of "Mother Nature," but she did not long rest there. It is pathetically interesting to follow the struggling and groping of this child-soul, in its silence and darkness, after the Light whose source is higher than the sun. In her tenth year we find her writing: "I do not know if Mother Nature made me, I think my mother got me from heaven, but I do not know where that place is. I know that daisies and pansies come from seeds which have been put in the ground; but children do not grow out of the ground, I am sure. I have never seen a child-plant ! I cannot imagine who made Mother Nature, can you? What was the egg before it was an egg? Why does the earth not fall, it is so very large and heavy? Tell me something that Father Nature does. May I read the book called the Bible?" Stopping before a globe in the school building, she demanded of her teacher: "Who made the *real* world?" When the name of God was given her. as designating Him who made all things, she asked, "Who made God?" And so she pushed on with such great and perplexing questions: "What did God make the new worlds out of? Where did he get the soil, and the water, and the seeds, and the first animals? Where is God? Did you ever see God?" In one of her letters to Phillips Brooks, who was applied to to give her religious instruction, she wrote most pathetically: "Please tell me something that you know about God." And she plied him with such questions as: "How did God tell people that his home was in heaven? What is a spirit? Did Jesus go to school when he was a child? How does God deliver his people from evil? Where is Heaven? What is conscience?"

It is not to be supposed that she has received satisfactory answers to all these questions with which the master minds of the world. from the beginning of time have wrestled; but she has an abiding faith in the eternal goodness at the heart of things. Her creed is condensed in the closing words of her own beautiful "Story": "Love is the most beautiful thing in all the world. Love is everything, and God is Love."

Since my arrival on these grounds, it has been my privilege to have several extended interviews with Helen, through the courtesy and assistance of Miss Sullivan, during which I have

sought to determine how her mind acts in certain respects which, on account of her peculiar condition, are of special psychological interest. I will conclude my address by giving the substance of her answers to some of the inquiries directed to her during these interviews.

In view of the fact that she was first instructed in the manual alphabet, and employed that agency entirely for several years as a means of expression, but subsequently acquired speech, and now employs that method of expressing her thoughts altogether, I was curious to know how the change had affected the language form in which she now most habitually thinks: and so I asked her, "Do you think mostly in finger language, or in vocal language?" To which she replied, "I think my thought-words as I spell them on my fingers. I sometimes think my thoughts in spoken words, but that is very seldom." Vocal language is not so far habitual with her as to enable her to think in it directly. She is conscious of the process of translating her words from her fingers to her lips. In time, I have no doubt, the vocal will become the primary mode of her thinking.

She was asked, "When you think of your dog, do you think of him as you felt of him, or as you spell his name on your fingers, or as you speak it?" To which she replied, "I think of him as I felt him. I have a touch-picture of him." To the question, "Do you have a touch-picture of persons also whom you know?" she answered, "Yes, if I know them very well. When they are not near me I feel that they are very near me. I think it is their spirits that are near, and it is hard to realize that they are not near. I am never alone; the thoughts of some one are always with me. I forget where I am when thinking of dear ones; and when I remember, it is like waking from a dream." To another question she said, "I think of persons as I felt their hands; I recognize their personality; as if I felt it when they are near. I think of my loving friends as if their arms were about me." In reply to the question, "How do you remember Dr. Bell?" she said, "I instantly see him before my mind." When asked, "What do you see?" she said, "His loving presence. I use the word *see* when I mean *feel*: my fingers are my eyes. But I see in another way, and that is with my mind's eye, or rather, with my spirit's eye. I see things far, far away, which I could not see with external sight if I could see: *so I am not blind.*"

In the midst of the conversation she suddenly touched me and asked, "What do you think of Swedenborg?" to which I replied that I considered him a very wonderful man, who had apparently the power of seeing invisible things. A quotation from Emerson concerning Swedenborg occurred to me, which I saw was peculiarly adapted to test her comprehension. So I said to her, "Emerson says of Swedenborg, 'A collossal soul, he lies vast abroad on his times, and will require the focal distance of many centuries to be fully seen.' What does he mean by that?" To which she instantly replied, "That means that people in the future will understand him better than they do in the present." I think we will all acknowledge that this characterization by Mr. Emerson is on a pretty high range to be understood by a child of fourteen; but, in addition, it involves some elements of peculiar difficulty to one whose mind has been shut out from sight perceptions, as it is based upon a fine analogy between time and space relations, and includes a figure drawn from the science of optics. But she grasped its meaning at once, though she asked for an explanation of the word, "focal," which was new to her. Upon being asked if she could repeat the quotation, she repeated it word for word.

To determine whether she recognized the peculiarity of what are known as onomatopoetic words, I asked, "Do you recognize any special appropriateness in the words "buzz," "splash," "whirr," and "hiss," as names for the things which they indicate?" To which she replied, "The words are like the sounds. When you say "splash," I see the waters fly, and when you say "buzz," I seem to hear the sound in my mind. I think I understand these words as other people do, "Whirr" is the sound an insect makes. I felt it in my hand once."

I asked her, "What do you understand *echo* to mean?" She said, "It is the sound of the voice which returns to us after having hit something in the distance." I quoted Byron: "From peak to peak, the rattling crags among, leaped the live thunder," and she explained it very clearly. When asked if she knew the meaning of the word *alliteration*, she said she did not; but when given the two examples she immediately recognized the peculiarity. She also explained what is meant by quantity and rythm in poetry, and quoted from a verse from the "Psalm of Life," beating time as she repeated it, and compared measure in poetry to time in music. She has

enjoyed poetry more since acquiring speech. She derives great pleasure from touching the case of a piano or a violin when they are being played, and said that music was to her a beautiful language. She distinguishes high and low tones, slow and fast measure, gay and sad sentiment, and said that high notes vibrate more rapidly than the low ones. She likes variations in musical vibrations; monotone is not pleasant.

Questioned with regard to what entered into her conception of beauty, she said she did not notice the faces of people much, but thought white people more beautiful than negroes, because their features are more regular and refined; said the French bronzes at the World's Fair gave her great pleasure, because they were so life-like and beautiful to her touch. But moral qualities rather than physical were in her mind when she thought of person as beautiful, — goodness, kindness, purity, etc.

The question which seemed to me most crucial as a test of her ability to form sight-conceptions, related to perspective. When asked if she knew the meaning of the word, she said, "It is a view at a distance." When asked to conceive of a man standing on a hill a mile distant from her, and to state how large he would appear, she replied promptly, "Small, of course, as he is so far away. It is so with mountains; the farther away they are the less clearly you see them." When asked to think of a railroad track, and to say whether the rails at a long distance from her would appear as far apart as those near her, she said, "No, they seem to be one when they are far off; you cannot distinguish one from another.

From my personal conversations with Helen, together with a study of various recorded incidents in her mental history, I am led to believe that there is in her, in a sense not true of the hearing and the seeing, what may not improperly be called a *double consciousness*. We can readily understand that, shut off as she is from the two chief avenues of intercourse with the external world, she lives most habitually in the subjective sphere. It is while in that sphere that she exercises the marvellous inner vision of which she gives so many illustrations, by which she conceives and throws upon the screen of her imagination pictures of form and color, and constructs a microcosm of the objective world. It is when her mental activities operate without distraction in this subjective realm that the few faintly remembered experiences of her seeing and hearing infancy, and the larger body

of submerged memories of that brief period, come to her aid. It is then that she forms sight and sound conceptions. But when her attention is directly turned to the external world, and her objective consciousness is called into exercise, and she is put upon the direct effort of sight-and-sound perceptions or conceptions, of course she strikes at once upon the impenetrable barriers which her lost senses have created, and is made aware of her impotency. She knows that she cannot now see or hear; and when she is asked specifically, "Can you form any conceptions of color or sound?" she is sure to answer, "No"; for her memories of color and sound are so faint that, when confronted by the blank and oppressive chasms of the darkness and the silence of her present state, they fade away as unrealities, and she cannot affirm them to be real. It is only when we watch her mind in its spontaneous workings, when she is not consciously trying to break through the barriers of her blindness and deafness, but simply constructing the materials of her knowledge under the forms furnished by the mind itself, that we discover that she does unconsciously in this subjective sphere what her objective consciousness contradicts. This view will account for many things in her mental history and her own testimony that must otherwise appear irreconcilable.

There are many other things which the mind of this unique and wonderful child suggest which, if I could have commanded more time for careful investigation and experiment, I would have desired to discuss. Especially are there some curious and important problems relating to the workings of her mind under the law of association which the psychologist would desire to investigate; but investigation along this line would require much time and care, and would involve, in order to secure a broad inductive basis, a careful comparison with investigations conducted with the congenitally blind, the congenitally deaf, those who lost sight and hearing in early and more advanced years, and the normal. I hope through the co-operation of superintendents and teachers in the institutions for the deaf and the blind, to prosecute this special inquiry in the near future, and from which I shall anticipate some interesting results.

VI, 7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

THE INSTRUCTION OF HELEN KELLER

BY

MISS ANNIE M. SULLIVAN.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

HARVARD COLLEGE
JUN 25 1897
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THE INSTRUCTION OF HELEN KELLER

BY

MISS ANNIE M. SULLIVAN

OF

BOSTON, MASS.

HELEN KELLER AND HER TEACHER, MISS SULLIVAN.

Photographed by Pach at Chautauqua.

THE INSTRUCTION OF HELEN KELLER.

Much has been said and written about Helen Keller, too much I think has appeared in type. One can scarcely take up a newspaper or a magazine without finding a more or less exaggerated account of her so called "marvelous accomplishments" which I believe consist only in her being able to speak and write the language of her country with greater ease and fluency than the average seeing and hearing child of her age. People are surprised that a child, handicapped by the loss of the senses of sight and hearing, has thus far succeeded in overcoming the obstacles which seemed to stand in the way of her intellectual development; they marvel greatly that her progress in acquiring knowledge compares favorably with that of more fortunate children, and do not seem to understand that such things are possible. Helen's case, because of the peculiar circumstances which attend it, appeals to our sense of wonder,—and as this is one of the deep-rooted instincts of human nature,—such appeals are seldom in vain; they command the attention even of those who would fain deny the possibility of the achievements which have been claimed for my pupil. It is easier for the credulous to say, "She is a miracle and her teacher is another miracle," and for the unbelievers to declare, "Such things cannot be; we are being imposed upon," than to make a conscientious study of the principles involved in her education. I, therefore, ask you to free your minds from pre-conceived notions and theories regarding this case, and give it the thought and study which it deserves with a view to satisfy yourselves whether the same, or similar, results may be obtained when children are so fortunate as to have eyes and ears with which to see and hear; or whether rapidity and ease and delight in education like dear Helen's are only possible where children are deprived of two senses. When I was asked, some time ago, by your president, to prepare a paper on Helen Keller to be read to this Association I hesitated to give assent, feeling very reluctant to write upon a subject which is so necessarily a part of myself;

but it was strongly urged that my personal experience and observation would be helpful to the teachers of the deaf, and this argument prevailed, as no other could have done ; and if it shall prove to be true, and you do derive help and encouragement from anything I shall say of my seven years' experience as Helen's teacher, I shall be more than glad that I did not let this opportunity pass unimproved. I shall also have cause for gratification if I succeed in convincing you that Helen Keller is neither a "phenomenal child," "an intellectual prodigy," nor an "extraordinary genius," but simply a very bright and lovely child, unmarred by self-consciousness or any taint of evil. Every thought mirrored on her beautiful face, beaming with intelligence and affection, is a fresh joy, and this workaday world seems fairer and brighter because she is in it. And while it is unsafe to predict what Helen's future will be, I know she is destined to be the instrument of great good in the world, not only by drawing forth the sympathies, and putting into exercise the kind emotions of others, but by teaching them how great things may be achieved under the worst difficulties, and how pure, and sweet and joyous may be existence under the darkest cloud.

I shall not enter into the details of Helen's education more fully than is necessary to give you a connected account of her progress. I shall assume that you are familiar with the phenomena shown in a mind debarred from the exhilarating influence of sight and sound, and that you understand the first principles involved in teaching a child thus afflicted.

LANGUAGE.

You have heard, again and again, the story of the way in which the use of five letters opened to her, who knew naught else, the door of all knowledge, of all joy ; but you can have no adequate idea of the eager impatience which filled the teacher's heart during the days she waited before that beleaguered citadel, anxious for some sign from the soul within. You have all read in Helen's own words how the idea that everything had a name suddenly flashed upon her mind. She had been taken to the pump-house to feel the water as it gushed, cool and fresh, from the pump, and while she was enjoying the pleasant sensation, I spelled the word "water" in her hand, and instantly the secret of language was revealed to her. In her story, speaking of this incident, Helen says : "That word, meaning water, startled my

soul, and it awoke full of the spirit of the morning, full of joyous, exultant song. Until that day my mind had been like a darkened chamber, waiting for words to enter, and light the lamp, which is thought." From that day to this she has gone forward from hour to hour, from day to day, never falling back, her progress a perfect joy to herself, and a delight to all who have opportunity to observe her.

You must not imagine, however, that, as soon as Helen grasped the idea that everything had a name, she at once became mistress of the treasury of the English language, or that "her mental faculties emerged, full armed, from their then living tomb, as Pallas Athena from the head of Zeus," as one of her enthusiastic admirers would have us believe. At first, the words, phrases and sentences which she used in expressing her thoughts were all reproductions of what we had used in conversation with her, and which her memory had unconsciously retained. And indeed, this is true of the language of all children. Their language is the memory of the language they hear spoken in their homes. Countless repetition of the conversation of daily life has impressed certain words and phrases upon their memories, and when they come to talk themselves memory supplies the words they lisp. Likewise the language of educated people is the memory of the language of books.

Language grows out of life, out of its needs and experiences, and its joys and sorrows and its dreams and realities. At first my little pupil's mind was all but vacant. Up to the time when I began to teach her, she had no means of registering on its blank pages her childish impressions and observations. She had been living in a world she could not realize. *Language* and *knowledge* are like Siamese *twins*,—they are indissolubly connected; they are interdependent. Good work in language presupposes and *necessitates* a real knowledge of things. As soon as my little pupil grasped the idea that everything had a *name*, and that by means of the manual alphabet these names could be transmitted from one to another, I proceeded to awaken her further interest in the *objects* whose names she learned to spell with such evident joy. *I never taught language for the* PURPOSE *of teaching it;* but invariably used language as a medium for the communication of *thought;* thus the learning of language was *coincident* with the acquisition of knowledge. In order to use language intelligently, one must have something to talk *about*, and having something to

talk about is the result of general *culture;* no amount of language training will enable our little children to use language with ease and fluency unless they have something clearly in their minds which they *wish* to communicate, or unless we succeed in awakening in them a desire to know what is in the minds of *others.* From the very first, Helen was eager and enthusiastic in the pursuit of knowledge. In the little story of her life she says: "I was never still during the first glad days of my freedom. I was continually spelling and acting out words as I spelled them. I would run, skip, jump, and swing, no matter where I happened to be. Everything I *touched* seemed to *quiver with life.* It was because I saw everything with the new, strange, beautiful sight which had been given me."

She had one advantage over ordinary children, nothing from without distracted her attention ; so that each new thought made upon her mind a distinct impression, which was rarely forgotten. At first I did not attempt to confine my pupil to any systematic course of study. I felt that she would accomplish more if allowed to follow her own natural impulses. I always tried to find out what interested her most, and made that the starting-point for the new lesson, whether it had any bearing on the lesson I had planned to teach or not, and her eager inquiries often led us far away from the subject with which we began. During the first two years of her intellectual life, I required Helen to write very little. In order to write with profit to himself, a child must have something to write about, and having something to write about, necessitates some mental preparation. The memory must be stored with ideas, and the mind must be enriched with knowledge before writing becomes a natural and pleasurable effort. Too often, I think, children are required to write before they have anything to say. Teach them to think and read and talk without self-repression, and they will write without self-consciousness.

Helen acquired language in an objective way, by practice and habit rather than by study of rules and definitions. Grammar with its puzzling array of classifications, nomenclatures and paradigms, was wholly discarded in her education. She learned language by being brought in contact with the *living* language itself; she was made to deal with it in everyday conversation, and in her books, and to turn it over in a variety of ways until she had mastered its anatomy. As I have, at another time stated,

I talked to her almost incessantly in her waking hours, and encouraged her to talk to me. I spelled into her hand a description of what was taking place around us ; what I saw ; what I was doing ; what others were doing ; anything, everything. I talked to her with my fingers as I should have talked to her with my mouth, had she been a hearing child ; and no doubt I talked much more with my fingers, and more constantly than I should have done with my mouth ; for, had she possessed the use of sight and hearing, she would have been less dependent on me for entertainment and instruction.

Very early in her education I led her to observe and describe flowers and animals. A flower or insect often furnished material for a long and intensely interesting language-lesson. I would catch an insect and allow Helen to examine its tiny wings, antennæ and plump little body ; then she would open her hand and, bidding it a tender goodbye, let it fly away in the sunshine. Helen says, in speaking of her early education : "I did not have regular lessons then, as I do now. I just learned about everything, about flowers and trees, how they absorbed the dew and sunshine ; about animals, their names and all their secrets, 'how the beavers built their lodges, where the squirrels hid their acorns, how the reindeer ran so swiftly, why the rabbit was so timid.' Once I went to a circus, and Teacher described to me the wild animals and the countries where they live. I fed the elephants and monkies ; I patted a sleepy lion and sat on a camel's back. I was very much interested in the wild animals, and approached them without fear ; for they seemed to me a part of the great, beautiful country I was exploring." The vegetable-garden and her mother's flower-garden, her numerous pets and the domestic animals were a never-ending source of instruction and enjoyment to her; and in thus being brought in close touch with nature, she learned to feel as if every little blade of grass had a history, and think of every bud as if it were a little child, and knew and loved her. I did not attempt to make these lessons in zoology and botany formally scientific. I introduced them early in her education for the purpose of cultivating her observation, furnishing themes for thought and to fill her mind with beautiful pictures and inspiring ideals. Material for language-lessons, knowledge of facts and greater power of expression were ends obtained through these lessons ; but they were not the most important aims.

I believe every child has hidden away somewhere in its being noble qualities and capacities which may be quickened and developed if we go about it in the right way ; but we shall never properly develop the higher natures of our little ones while we continue to fill their minds with the so-called rudiments. Mathematics will never make them loving, nor will the accurate knowledge of the size and shape of the world help them to appreciate its wondrous beauties. Let us lead them, then, during the first years they are intrusted to our care, to find their greatest pleasure in Nature, by training them to notice everything familiar or strange in our walks with them through the fields, the woods, on the hill tops, or by the sea-shore. The child who loves and appreciates the wonders of the out-door world will never have room in his heart for the mean and low. Such a child will have risen to a higher plane, and in a wise study of God's laws in Nature he will ever find his highest joy.

Books have played a very important part in Helen's education. As soon as she had learned the raised letters I gave her books to read, and I doubt very much if I shall be able to make you understand the importance and advantage that books have been to her in acquiring a command of idiomatic English; the advantage has certainly been incalculable. I am confident that the ease and fluency with which she uses language are in large part due to the fact that embossed books were placed in her hands as soon as she had learned the letters. She has, like many hearing persons, a natural aptitude for comprehending and using language as soon as it has been acquired. I think, also, much of the fluency with which she uses language is due to the fact that nearly every impression which she receives comes through the medium of language. But after due allowance has been given to Helen's natural aptitude for acquiring language, and from the advantage resulting from her peculiar environment, I think that we shall still find that the constant companionship of good books has been of supreme importance in her education. It may be true, as some claim, that language cannot express to us much beyond what we have lived and experienced; but I have always observed that children invariably manifest the greatest delight in the lofty poetic language, which we are too ready to think beyond their comprehension. "This is all you will understand," said a teacher to a class of little children, closing the book which

she had been reading to them. "Oh, please read us the rest, even if we don't understand it," they pleaded, delighted with the rythm, and the beauty which they felt, even if they could not interpret. In speaking of what books have been to her, Helen says: "I read my first story on May-day, and ever since books and I have been loving friends and inseparable companions. They have made a bright world of thought and beauty all around me; they have been my faithful teacher in all that is good and beautiful; their pages have carried me back to ancient times, and shown me Egypt, Greece, Rome; they have introduced me to kings, heroes and gods; and they have revealed to me great thoughts, great deeds. Is it strange that I love them?" It is not necessary that a child should understand every word in a book before he can read with pleasure and profit. Indeed, only such explanations should be given as are really essential. Helen drank in language which she at first could not understand, and it remained in her mind until needed, when it fitted itself naturally and easily into her conversation and compositions. Thus she drew her vocabulary from the best source,—standard literature, and when the occasion came she was able to use it without effort. Indeed it is claimed by some that she reads too much, that a great deal of originative force is dissipated in the enjoyment of books, that when she might see and say things for herself, she sees them only through the eyes of others, and says them in their language; but I am convinced that original composition without some mental preparation in the way of conscientious reading is an impossibility. She has had the best and purest models in language constantly presented to her, and her conversation and her writings are unconscious reproductions of what she has read. Reading, I think, should be kept independent of the regular school exercises. Children should be encouraged to read for the pure delight of it. The attitude of the child toward his books should be that of unconscious receptivity. This means true reading; reading not only for entertainment, but for intellectual enrichment and enlargement. The great works of the imagination ought to become a part of their lives, as they were once of the very substance of the men who wrote them. It is true that the more sensitive and imaginative the mind is that receives the thought-pictures and images of literature, the more nicely the finest lines are reproduced. Helen has the vitality of feeling, the freshness and eager-

ness of interest, and the spiritual insight which proclaims the artistic temperament, and naturally she has a more active and intense joy in life, simply as life, and in nature, books and people than less gifted mortals. Her mind is so filled with the beautiful thoughts and ideals of the great poets that nothing seems commonplace to her; for her imagination colors all life with its own rich hues.

SPEECH.

It was three years from the time when Helen began to communicate by means of the manual alphabet that she received her first lesson in the more natural and universal medium of human intercourse—oral language. She had become very proficient in the use of the manual alphabet which was her only means of intercourse with the outside world; through it she had acquired a vocabulary which enabled her to converse freely, read intelligently, and write with comparative ease and correctness. Nevertheless, the impulse to utter audible sounds was strong within her, and the constant efforts which I made to repress this instinctive tendency, which I feared in time would become unpleasant, were of no avail. I made no effort to teach her to speak, because I regarded her inability to watch the lips of others as an insurmountable obstacle in the way of her acquiring oral language. But she gradually became conscious that her way of communicating with others was different from that used by those around her, and one day her thoughts found expression in the following questions. "How do the blind girls know what to say with their mouths? Why do you not teach me to talk like them? Do deaf children ever learn to speak?" I explained to her that some deaf children were taught to speak, but that they could see their teachers' mouths, and that that was a very great assistance to them. But she interrupted me to say she was very sure she could feel my mouth very well. Soon after this conversation a lady came to see her, and told her about the deaf and blind Norwegian child, Ragnhild Kaata, who had been taught to speak, and understand what her teacher said to her by touching his lips with her fingers. Helen's joy over this good news can be better imagined than described. She at once resolved to learn to speak, and from that day to this she has never wavered in that resolution. She began immediately to make sounds which she called speaking, and I saw

the necessity of correct instruction, since her heart was set upon learning to talk, and, feeling my own utter incompetence to teach her, never having given the subject of articulation a moment's study or thought, I went with my pupil, for advice and assistance, to Miss Sarah Fuller. Miss Fuller was delighted with Helen's earnestness and enthusiasm, and at once commenced to teach her. In a few lessons she learned nearly all of the English sounds, and in less than a month she was able to articulate a great many words distinctly. She was not content from the first to be drilled in single sounds; but was impatient to pronounce words and sentences. The length of the word or the difficulty of the arrangement of the elements never seemed to discourage her. But, with all her eagerness and intelligence, learning to speak taxed her powers to the utmost. There is, however, always a certain exhilaration in fighting against difficulties and in surmounting obstacles; struggle, however arduous and painful, has an element of inspiration. There is a satisfaction of seeing from day to day, or perhaps from hour to hour, the evidence of growing mastery and the possibility of final success. And Helen's success has been more complete and inspiring than any of her friends dreamed or expected, and the child's own delight in being able to utter her thoughts in living and distinct speech is shared by all who witness her pleasure when told by strangers that they understand her.

I have been asked a great many times whether I think Helen will ever speak naturally; that is, as other people speak. I am hardly prepared to decide that question, or even give an opinion regarding it. I believe that I have hardly begun yet to know what is possible. I have not given the subject all the time, and study and thought which it requires, and which I intend to give it in the near future. Teachers of the deaf often express surprise that Helen's speech is as good as it is when she has not received any regular instruction in speech since the first few lessons given her by Miss Fuller. I can only say in reply, "This is due to habitual imitation and practice! practice! practice!" Nature has determined how the child shall learn to speak, and all we can do is to aid him in the simplest, easiest way possible, by encouraging him to observe and imitate the slightest vibrations resulting from articulation.

In conclusion, it may interest you to know to what stage Helen has attained in her education at the present time. During the past year she has made considerable progress in the study of

Arithmetic ; but Latin, History, Literature, and Geography are her favorite studies, and I venture to assert that very few boys and girls of her age have a more extensive knowledge of these subjects than my pupil. In these studies she is greatly assisted by her vivid imagination, which translates words into images and sentences into pictures. The following passage from her diary indicates more clearly and forcibly than any words of mine could do, Helen's attitude toward her studies, and shows that she is eager and as enthusiastic in her pursuit of knowledge now as she was six years ago :—

"DEAR DIARY: To-day is the thirteenth of October, 1893, and I have some pleasant news for you. My studies began to-day, and I am very, very glad. I study Arithmetic, Latin, History, Geography, and Literature. I am glad because I want to learn more and more about everything in this beautiful, wonderful world. Every day I find how little I know ; for I catch glimpses on all sides of treasures of history, language, and science,—a beautiful world of knowledge,—and I long to see everything, know everything, and learn everything. I do not feel discouraged when I think how much I have to learn, because I know the dear God has given me an eternity in which to learn it.

"I used to say I did not like Arithmetic very well, but now I have changed my mind ; for I see what a good, useful study it is. It helps me to think clearly and logically and strengthens my mind in many ways. I try to be very calm and patient now when the examples seem very hard, but sometimes in spite of my great effort to keep my mind in the right place, it will flutter like a little bird in a cage and try to escape into the pleasant sunshine ; for nice and useful as Arithmetic is, it is not as interesting as a beautiful poem or a lovely story.

"Latin is a very beautiful language, and I hope I shall be able to speak and read much of it when I go home next Spring. Already I begin to feel better acquainted with the grand old heroes of Rome, since I know a little of the language in which they thought and talked, so long ago.

"I love Literature and History too, because they teach me about the great things that have been thought, and dreamed and achieved in the world, and help me to understand 'how the law of good worketh incessantly, without halting, without rest ; planting seeds of knowledge here, through earth to ripen, through Heaven to endure.'"

But it is Helen's loving and sympathetic heart rather than her bright intellect which endears her to everybody with whom she comes in contact. She impresses me every day as being the happiest child in the world, and so it is a special privilege to be with her. The spirit of love and joyousness seems never to leave her. May it ever be so. It is beautiful to think of a nature so gentle, pure and loving as hers ; it is pleasant also to think she will ever see only the best side of every human being, while near her the roughest man is all gentleness, all pity. Not for the world would he have her know that he is aught but good and kind to everyone. So we see, pathetic as Helen's life must always seem to those who enjoy the blessings of sight and hearing, that it is yet full of brightness and cheer and courage and hope.

VI. 7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

IMPROVEMENT AND DEVELOPMENT OF THE HEARING

BY

MISS LILLIAN E. WARREN,

THE HARWOOD DIACRITICAL MANUAL

BY

MISS MATTIE P. HARWOOD,

THE HIGHER INSTRUCTION OF THE DEAF

BY

MR. J. D. KIRKHUFF,

AND

ARTICULATION TEACHING IN THE WISCONSIN SCHOOL FOR THE DEAF

BY

MISS ALMIRA I. HOBART.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

HARVARD COLLEGE
JUN 25 1897
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IMPROVEMENT AND DEVELOPMENT OF THE HEARING

BY

MISS LILLIAN E. WARREN

OF

243 WEST TWENTY-FIRST STREET, NEW YORK CITY.

IMPROVEMENT AND DEVELOPMENT OF THE HEARING.

Speech is the expression of feeling, and feeling is best aroused through the hearing. Impressions conveyed by the other senses, though serving excellently as substitutes, can never atone fully for the loss in this direction. Here is a means of cultivation from which the totally deaf are cut off.

The normal infant's first outcry of pleasure when affected by music or other sounds marks a distinct step in brain development. A connection is thus established between hearing and the organs of articulation. Before any attempt is made to repeat what is heard, there is a long interval, during which, without conscious effort various sounds are memorized. From this storehouse paths are formed to the organs of speech, prompting imitations; later there occurs a decided advance in mental development, which is the ability to select and arrange words in various orders to express thoughts. All these operations employ activities wholly lacking in the mind of a totally deaf child. With him, the slow process of obtaining language by the eye alone, appeals to the intellect and through the intellect to the feelings; he must make a conscious effort to receive a cold impression, and misses the inestimable blessing of being subject to outside influences touching him directly. In other words, in the deaf child certain portions of the brain lie dormant whose office is to give natural speech, and to arouse the affections. The number of totally deaf is limited, however, compared to the many presenting various degrees of hearing and various defects of speech. Those who have functional ear difficulties repeat sounds accurately in proportion to their ability to receive them correctly; some hear low tones and not high, others high and not low, and all at widely differing ranges. Another phase is found in the child who hears the sound but has no memory for it; in his case the path of impression finds no hindrance in the ear, but in the brain, and the result is a retarded development of

speech. Others are unable to give the right stimulus to the organs of articulation, as shown in the many varieties of defective utterance, lisping, thick tongued, heavy speech, and the more serious forms, stuttering and stammering. A much larger class of children suffer from certain slow processes by which the length of time requisite for impressions to be conveyed along the intercentral paths, is so prolonged that the individual is considered dull, stupid, or obstinate. Undoubtedly every teacher of the deaf feels a wish to make use of any degree of hearing possessed by a pupil and yet some think the outlay of time and effort are not compensated by the results obtained. Practical returns seem small. When so much has to be done in every direction for our pupil, they ask, is it wise to use hours for what may yield so little?

Let us consider the subject with care. In the normal child the hereditary tendency to action between the ear and a speech-center has full play; he receives impressions through hearing and repeats them readily. There is no such prompt action between his eye and his organs of articulation. It is more difficult for him to imitate a position formed silently by the latter than it is for him to hold down three fingers and raise the little one without help from his other hand. Any one who has watched his early attempt to perform that feat will recall the awkwardness and failure, and yet would not advise giving up the effort as fruitless. The child is assisted by means of simple exercises, encouraged to exert himself, and finally has his fingers under control. The quick ear conveys innumerable messages to the little brain and speech is obtained thereby. The teacher deals with the other senses. The eye is trained to detect differences in colors and shapes, to read the printed page and script; the hands are taught to delineate with the pencil and brush the forms perceived by the sight, and gain in dexterous use of various implements, as the needle and saw, the hammer and ball, the keys of the piano and the lawn tennis racquet. Confidence is felt from the first that the child will learn to balance himself in walking and running, jumping and swimming, no matter how feeble his early efforts. No one waits for him to tell us he feels he may succeed in these accomplishments. Nevertheless, we do wait for him to show us he can perceive sounds. If he does not find out the fact for himself or if he does so imperfectly, should we not assist him in this direction,

as we do in seeing and in other ways? When we realize the fact that hearing requires wonderfully intricate workings of the brain slowly brought into action during many months and even years of the normal child's life, that it leads to the easy, natural acquiring of language upon which all future development depends, that its, moral effect is so great as to make use of the word hearing synonymous with obedience, are we doing for our pupils all that we should if we fail to help them in the use of this sense? Can we help them unless we carefully study the mental operations of the normal child during the time in which it is acquiring speech? Should we not strive to stimulate the dormant portions of the brain, thereby producing a somewhat even mental development, instead of considering the more or less practical use the child may make of his hearing, as the criterion of success?

It may be useful to touch more fully upon the various kinds of deafness: First, that which is due to functional disability of the ear. This may be serious enough to cause complete absence of hearing, or so slight as to be little noticed except by the individual himself; between these are many degrees. Every one knows among his acquaintances persons who are suffering from a sudden or progressive deafness, dating from a disease such as scarlet fever, or from a succession of severe colds of a catarrha nature. We call them hard-of-hearing people. They have learned to speak in the normal manner, and by that means have obtained a knowledge of the structure of the language, and are perfectly familiar with linguistic sounds. In consequence they can make intelligent use of the amount of hearing they retain. Such persons can be assisted by means of a conversational tube or hearing trumpet. Street noises and the rumble of a railroad train increase hearing power in many cases. The pleasure arising from the use of these mechanical aids is oftentimes great enough to cause changes in habits and tastes.

Let us emphasize the fact that all impressions conveyed through diseased ears, in adults, can be made use of directly. This is also the case with all children who had hearing sufficient to enable them to speak at the normal age.

All the complex nervous mechanism necessary for articulate speech obtained in the natural manner, has been set in motion; the only hindrance is the more or less inability of the organ of hearing to perform its duty.

If, however, the impaired usefulness of the ear should be present in a marked degree in very early childhood, it would render impossible the months of listening without conscious effort, by which the speech faculty is developed in the normal human being. We have then an instance in which the child receives sound impressions imperfectly, and from the fact that he has never known them otherwise he cannot make use of his ability though it be of the same degree possessed by the hard-of-hearing adult. He is utterly unaware of its possibilities. He is to all practical purposes extremely deaf. Without special instruction through the eye he remains mute. While we believe the importance of articulation and speech-reading cannot be overestimated, we should not forget that all the operations of the normal human being are attained by very different processes. Just as the teacher trains the hand in the mysteries of writing, he should be prepared to educate to some degree a given amount of hearing.

Our duty would seem to be to carry out nature's method of teaching the child to hear. Whatever mechanical aid proves beneficial should be employed, and all that is done in this direction is rightfully called a means of improving the hearing. Now let us ask ourselves the question, why we should consider deafness always due to an impaired condition of the ear, or of the auditory nerve?

Suppose an instance, so common in our experience, of a child presenting no history of ear trouble, the cause of whose deafness is a mystery. Why should we rest easy in the belief that the difficulty is solely within the organ of hearing; that it is a case of malformation or arrested development? Presuming the middle ear and auditory nerve to be able to perform their functions and there exists a dormant condition of the portion of the brain whose duty it is to act with them, the consciousness is not reached. The child does not know what sound is. He is as completely beyond its influence as we are unmindful of the striking of a clock or of some other noise, when deep in a "brown study." Here is a serious defect in the perceptive functions of the brain. It has been demonstrated that educative means are helpful in arousing some degree of activity in these cases. Instrumental aids are not of value. Great volumes of sound must be avoided or else there is a shock and confusion with utter inability to distinguish differences. Noise is a source of

annoyance. The instruction by ear should be entirely unaided by the eye to follow nature's plan. If vision and hearing are allowed to work together there is no memory for sound formed, but merely another appeal made to such impressions as have been obtained through the eye; the results are the pupil retains any peculiarity he may have acquired, and a certain amount of tension of the organs of articulation due to long enforced attention upon them, while he can seldom understand a new word unless he sees it on the lips first. Instruction which compels the hearing to rely upon its single efforts gives, in time, the power to appreciate the various elements of the language; and as all words are but arrangements of some few of these same elements, new ones can be repeated as readily as familiar ones.

This kind of instruction assists development of hearing. It is slower and entirely different from the education of that which has become impaired by organic disease and is already known and appreciated by the individual. Various sounds are recognized and enjoyed before the human voice is noticed ; the power to determine the source of these sounds grows by constant practice ; words are heard when spoken near the ear, their familiarity admitting of longer distance later; a memorizing of these words finally takes place and even after the child can hear and repeat, there is a noticeable slowness in the process.

Then follows the ability to remember several words and to repeat them in the order in which they were heard. Later, a complete sentence is appreciated and an answer or reply of some kind promptly given. It is evident that reasoning from facts obtained through the hearing is much slower in these children, for a time, than is the case when the information is received by them through speech-reading, thereby proving new paths are opened.

This *improvement of hearing* refers to relief from functional difficulty and *development of hearing* to special mental discipline. In the cases of functional disability, as previously mentioned, a gain is perceptible much sooner than in the instances of lack of perception. There is also much more slowness in the prompting of the organs of speech when the latter exists; such slowness as to make the practical use of the hearing perhaps small. Yet all must be willing to admit that a little hearing is better than none. The children's minds have been

opened to some of the beauties of sound, and words expressive of such ideas have assumed a different meaning. I am not urging too much dependence upon this power of hearing; but rather the great importance of cultivating every sense. A parallel is found in those individuals who were born blind and have been relieved by operations; careful reports of such cases are very explicit regarding the inability of the patients to make use of their new power for a while. They were taught to see. Let the deaf be taught to hear.

Why should the deaf, however, be the only ones to receive this special instruction? We realize there are cases of retarded development of speech followed by small ability to form sentences and different kinds of defective speech. These children are not feeble-minded; indeed, the feeble-minded often chatter like magpies. We are surrounded by persons who are slow in perception of sound. Halting speech is common. In the schools are many pupils considered dull and stupid in certain directions, but showing an aptitude for work on other lines that require a different set of faculties. Why are they dull? Because what the teacher says reaches their consciousness an interval after she has spoken; slow in hearing, they are in consequence, slow in replying. They are embarrassed easily; they forget what they were going to say, or fail in power to make the vocal organs obedient servants to their wills. Many a child is considered stupid who is suffering from some defect in hearing. Extreme cases are those in whom is developed what a London medical journal has termed "pathological language." Certain portions of the organs of speech are helpless, an effort is made by others to do double duty, and the result is a word utterly foreign in sound to that which has been heard. Careful analysis of the difficulty shows the teacher that it is due to a hindrance to the orderly growth of the speech faculty. By recognizing this fact and applying the remedy, I have enabled the individuals to gain in quickness of perception and fluency of utterance. In smooth and ready speech there is a means of mental development obtainable in no other way; the stammerer knows this to his sorrow. It has been frequently remarked that articulative exercises have a beneficial effect upon all the nerves, making them more expressive agents of the mind.

The effort to open an apparently sealed avenue of communication to the brain of the deaf child, outlines certain educative processes by which the dull are stimulated, and the speech sufferers relieved. In short, I urge that hearing receive the special attention it deserves.

THE HARWOOD DIACRITICAL MANUAL

BY

MISS MATTIE P. HARWOOD

OF THE

NORTHERN NEW YORK INSTITUTION FOR DEAF-MUTES,

MALONE, NEW YORK.

THE HARWOOD DIACRITICAL MANUAL.

A few weeks ago the President of this Association visited the Northern New York Institution. At that time we were about to send out a Syllabus of a work which we hope may be of some help to those engaged in teaching the deaf to speak. Dr. Gillett suggested that it be brought to you at this time, so I will endeavor to explain its use.

Not feeling satisfied with the work we were doing—the pupils seemed so dependent for the pronunciation of each new word—I began to look about for a remedy.

When hearing people wish to know the pronunciation of a word they refer to a dictionary. Why not the deaf? In referring to a dictionary, and having forgotten the sound of the vowel, as represented by the diacritical mark, we look at the bottom of the page and there find some common word containing the sound, and can then place the sound in the first word. This Manual is intended to aid the deaf in doing what the hearing can do for themselves.

With this object in view, and wishing to make the work as simple as possible, this Manual has been prepared.

The principal sounds, that is, the long and short sounds of the vowels, also *a* ascending and descending, as we may call them, and the principal consonants are taught to the pupils. All other sounds are considered as equivalent to some one of these.

The first and second pages contain a list of words in which all the vowel sounds used in the Manual are represented.

On the third and fourth pages the vowels are classified as front, back, middle and combined. These are so called from the parts of the mouth principally concerned in their formation.

The front vowels consist of ē, ĭ, ā, ĕ, ă. All letters found in the same line with any one of these are considered equivalent to the first or principal sound. Not that the sound is always exactly the same, but the difference is so slight that few would distinguish it.

The back vowels o͞o, o͝o, ŏ, ä, a̤, ȯ, with their equivalents, are next given, then the middle vowels consisting of ŭ and the combination ûr.

At the end of each line is a word, easy to articulate, containing the sound represented by the letter preceding it.

Following these are the vowels, or combinations, that we have classified as combined, for, when analyzed, they are found to contain more than one sound. First we have ī represented by äē, then ou ow, which, if not diacritically marked, equal in sound äo͞o. Next oi and oy represented by a̤ĭ, and last ū, with its equivalents, as ĭo͞o.

You will also find a few notes at the bottom of the pages. å. This sound is between ă and ä, usually ă. It is not so open and prolonged as ä, neither is it exactly the same as ă, but if we can succeed in getting our pupils to pronounce a word containing this sound, and they give a clear ă, I think no one will have any difficulty in understanding them.

Ee=ē. In the word *been* some authorities give the pronunciation as bēn, others as bĭn. With this exception, I think you will find no word in Webster's *International*, from which this Manual is compiled, in which ee is not equivalent to ē unless otherwise marked as in soirée where it is given as swärā, or in inée pronounced ēnā. There may be two or three others, but the exceptions are such I think we may say that the rule will hold good. We have previously referred to ou and ow. E final is silent except in words of two or three letters, such as he, she, we, be, the, and a few others.

Gh following ī is silent. Since this Syllabus was printed, it has been found that gh when combined with t is never sounded.

And now, a few words about â. This sound occurs only before r. Common usage makes it that of ă with a slight prolongation caused by the organs taking position to sound the following r.

On the fifth and sixth pages the consonants are classified as lip, tip, top and back.

Under the first, those formed by the lips, we find p, b, m, f, v. In the same line with f you will find ph, which is equivalent to f. Next we have those formed by the tip of the tongue, t, d, n, l, r, s, z and th vocal and non-vocal, with kn and pn as equivalent to n, wr to r, ç to s, and s̱ to z. Then follow the sounds formed with the top of the tongue, sh, ch, j, zh, h. Here

we have ç̇h equivalent to sh, tch to ch, and ġ and dġ to j. And last, these formed with the back of the tongue, k, g, ng, x, qu, with c, ch and ck equivalent to k.

Perhaps a note should have been given in regard to pn and kn. When p and n, or k and n, are together in a syllable, we have only the sound of n, but in such words as blankness, hackney, cheapness and crapnel both sounds are given. The same is true of ck.

You will find at the bottom of the last page that c equals k before a, o, or u, and that it equals s before e, i, or y.

You will see that there is nothing in this to assist the deaf in the formation of any sound, but, having acquired the ability to give correct sound, this Manual represents which sound is to be given, and gives the deaf the same help in pronunciation as any hearing person has.

These marks can all be represented to pupils with the manual alphabet and a few sounds indicative of the diacritical marks. We will first speak of the vowels. Long sounds are represented by moving the hand from left to right, as we are forming the letter, short sounds by a short curved line, *a* ascending by slightly raising the hand, and *a* descending by inverting and lowering it.

With the consonants, we have c equivalent to s, which is represented by moving the fingers in the form of a cedilla immediately after forming the letter, s equivalent to z by the mark as used in the dictionary, c to k by placing the first finger of the right hand against the letter when formed by the left hand, and g and dg, equalling j, by a dot above.

If you wish to represent any letter to the pupils as it is diacritically marked, and not as its equivalent is marked, it can be done by representing the mark as given in the dictionary.

Placing the hand under the chin denotes voice, and the finger placed upon the nose shows that a nasal sound is wanted.

The Manual, when complete, will be published in book form. Other equivalents, or notes, also as complete notes of explanation as can be given, will be added to what you now have.

THE HIGHER INSTRUCTION OF THE DEAF

BY

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THE HIGHER INSTRUCTION OF THE DEAF.

The instruction of the deaf is one of the most interesting themes that can engage the attention of the scholar, the philanthropist, or Christian. We know of none more worthy of their learning, love, or devotion. The teacher who engages in the work of their instruction should be a scholar, a philanthropist and a Christian in the fullest import of these words. He can find no nobler field for their exercise or use.

So constant is the demand upon the teacher's learning, patience, and benevolence that those who enter the work with the desire to benefit their unfortunate pupils are ennobled by it. In proof of this statement, we need only refer to the illustrious names of De L'Epée, Sicard, Heinecke, Gallaudet, and their distinguished successors, who, to-day, are laboring to carry forward the work committed to their hands by their immortal predecessors.

You are too well acquainted with the work to make a rehearsal of its duties or difficulties necessary. These are so great that only the most careful, plodding, and painstaking can hope for any measure of success in it. The loss of hearing presents a formidable barrier to access to the mind, but not an insuperable one. With proper methods and favorable conditions, and with untiring diligence on the part of instructors and friends, the deaf may become as well educated as any persons of like capacity and intelligence. When this is not attained, the blame should not be placed upon the pupil, as is too often the custom, but upon wrong methods and unfavorable conditions.

When right methods have been sought out and applied, and unfavorable conditions have been remedied, the education of the deaf will be carried higher and the results will be far more satisfactory than they are at present. The discovery and application of right methods and the removal of unfavorable conditions should be the purpose of every friend of the deaf—not the preservation of old systems and practice of instruction. Whatever

is possible should be done for them, regardless of expense. It is their right as human beings. Self-sacrificing men and women stand ready to devote their lives to their service in the interest of humanity.

Although the instruction of the deaf has passed the experimental stage and may be considered grounded upon well established principles, still much remains to be done to complete the superstructure. Results are not satisfactory. Every earnest friend of the deaf, when he contemplates what has been accomplished and compares it with what remains to be done, deplores its littleness and insignificancy.

Hence the unrest which is so prevalent in all our institutions, no matter what be the method of instruction. All feel the necessity for greater earnestness, greater zeal, and greater efforts for the accomplishment of nobler, grander, and more satisfactory work in the instruction of the deaf, that they may attain higher moral and social conditions. It is not enough to refine and elevate their minds, and give them noble hopes and aspirations without placing within their reach the means of their gratification, or making their education an aid to the realization of their mental and physical wants.

An education that does not contribute to this end is the cruelest mockery, and is to blame for the disorder, dissatisfaction, and unhappiness so prevalent in every condition of life. Our system of education has created in our people wants and desires for the attainment of which modern society offers meager opportunities. These wants and desires are the natural outgrowth of universal education, and are essential to the happiness of educated men and women, but beyond the reach of most of them. All feel the injustice of these conditions, because they are the inheritance of an uneducated past. The safety of the State depends upon their rectification, for the stability of society depends upon the general good and happiness of its members. Whatever contributes to these ends should be within the reach of honest endeavor. It should be the object of the higher education of the deaf to teach them how to employ their physical and intellectual powers so as to secure for themselves the necessaries of life and some of its comforts, without which human life is pitiable and wretched.

An education to be of any value should prepare its recipient to make the most of his opportunities. This is particularly

important to the deaf. Their opportunities for the acquisition of a livelihood are not so numerous as those of the hearing, and, consequently, their education should fit them for the pursuits open to them. In other words their education should be practical and suited to the station they are to fill in life, and the position they are to hold. If their education is to be carried higher, they should be given the means of bettering their condition. This, moreover, should be done for all pupils who possess the mental qualities or the social position to warrant the hope that they can succeed in a profession or distinguish themselves in literature or art. We hope to see the time when more attention shall be paid to the professional and literary education of the deaf. Those who have already won distinction in these fields, encourage us to believe that many more might have done equally well had they received the necessary aid and training. These, however, constitute but a small percentage of our pupils. Most of them come from the laboring classes and have to return to the same sphere on leaving school. Their education should fit them for the trials and difficulties they will have to encounter on re-entering it, and should enable them to gain subsistence for themselves and those dependent on them, and possibly something for declining years.

This ought to be possible for most all the deaf. But we can only hope for it by carefully training them and implanting in their minds and hearts correct habits, correct views of life, and correct principles. These should be made especial objects of attention, for they can only be established in our pupils by the most constant care and solicitude on our part.

Too many teachers in their zeal for the higher instruction of their pupils in science and literature neglect to give these important subjects the attention they deserve, for they make up the character, than which nothing is more important.

Character building is the highest work that can engage the attention of the teacher. He will find abundant material for this purpose in the higher instruction of the deaf. In the study of history he should point out the constant Force everywhere manifesting itself, that makes for righteousness. In the study of the natural sciences, he should show them how law and order reign and preserve the harmony and integrity of the universe. He should teach his pupils that we are all a part of the universe and subject to its inflexible laws, any infraction of which on our

part produces swift and certain punishment. He should be urged to study these laws for the sake of self-preservation. And in the study of political and social science, he should be made to understand, that in wronging another, he wrongs himself and all other persons in the world, so closely are human interests related. Such moral lessons will be found more productive of good than the more formal ones of chapel or Sunday-school, because they can be made more direct and applicable to the concerns of life. They are within the range of observation and experience, and require no elaborate argument to maintain their truthfulness and cogency.

The higher education of the deaf, we think, can be generally carried on successfully and as far as necessary in our State institutions. If, however, a pupil shows remarkable ability in any one direction, the talent should be cultivated and directed —particularly if there be a possibility that it may be made the means of obtaining a livelihood, or that it may be conducive to the happiness or pleasure of the world. Such a pupil should have the advantages of special schools and special teachers—not necessarily those for the deaf, but of schools and teachers that make a specialty of the subject for which they show an especial inclination. The education should be made to fit the genius of the child—not the child to fit the education. This maxim has long received the approbation of educators, but so far has not been the practice of our schools. Nevertheless, in the schools of the future it will be the great consideration. It already plays an important part in the elective studies of our leading institutions of learning.

To conclude, the higher instruction of the deaf should aim, not so much to make scholars as self-reliant men and women: it should also aim to instruct them in their duties and responsibilities, in the performance of which so many fail through ignorance of the fundamental laws that regulate conduct between man and man: but its chief concern should be, to so ground them in the principles of virtue and rectitude that after this life they may attain the inheritance of the just that fadeth not away.

ARTICULATION TEACHING IN THE WISCONSIN SCHOOL FOR THE DEAF

BY

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ARTICULATION TEACHING IN THE WISCONSIN SCHOOL FOR THE DEAF.

The state School for the Deaf at Delavan, Wisconsin, began its work with seven pupils in the fall of 1851.

The method of instruction then employed and continued in the further growth of the school for many years, was confined to what is familiarly known as the sign method, and used so generally throughout the schools for the deaf of the United States.

But this school, if not the pioneer, was one of the first to introduce articulation teaching into its curriculum, doing this in the autumn of 1868. The honor of beginning this work belongs to Miss Emily Eddy, who has just resigned her position in the school to take her final leave of the profession, after thirty-seven consecutive years of continuous service in the instruction of the deaf. Miss Eddy, during her vacation in the East, in 1867, visited Miss Rogers and her school at Chelmsford, shortly before its removal to Northampton, and there she gained her first ideas as to the practical utility of speech and lip-reading for the deaf pupil. Instead of finding that it might be added simply as a slight accomplishment in connection with training received principally by signs and written language, she became convinced that a better use of the English language and higher attainments could be made by this medium than without it; that though a laborious, it was a practicable undertaking. Accordingly, on her return she urged that the beginning of oral work in the Wisconsin school be at once attempted. From the trustees' report for the year ending October, 1868, I quote the following:—

Experience has established the fact that some of the deaf and dumb do now understand from the motion of the lips what a person says, and can hold conversation with others in this manner the same as speaking persons. It is not pretended that all may be taught in this way but that a majority can.

The friends of this mode of teaching advocate the abolition of signs altogether, where oral instruction is given. Schools for this kind of instruction have been established in Massachusetts under Miss Rogers, and her success has been very good in this direction. She visited our institution the past summer, and gave the trustees and teachers instruction in her method of teaching. She is very sanguine that it is the true method in a majority of cases and will in a short time be adopted. While here she inspired so much confidence in her mode, that the trustees felt it a duty to make the trial in our institution. They had a class formed at the commencement of the present term and put under the instruction of Miss Eddy. She has been engaged with her class for about two months. The progress which some of the class have made during this short time is quite surprising to all who have taken the opportunity to witness the same. The deaf and dumb have been taught to speak in this institution, and some of the class speak with remarkable clearness. Persons may be incredulous in this matter, but we say to such, "come and see for yourselves."

These articulation classes were organized at the beginning of the term in 1868, after the superintendent had attended the Conference of Principals at Washington in May, 1868, where resolutions were passed to the effect that adequate means should be provided, in all institutions for the education of the deaf, for imparting instruction in articulation and lip-reading to all pupils who might be able to profit by it.

In the superintendent's report for 1889, this statement is made in regard to what was done the first year: "Twenty-six pupils in all have been under instruction in lip-reading and articulation, devoting an hour or two a day to this exercise, while still pursuing their studies in the ordinary way the rest of the time. Signs are freely used, occasionally by the teacher and constantly by the pupils, and are considered a valuable auxiliary."

For various reasons which made the success doubtful, only fifteen were continued under instruction during this year. The result of the experiment for the first year is given in these words: "That while articulation and lip-reading are practicable for a small proportion of deaf-mutes composed principally of semi-mutes, the sign-language constitutes the indispensable medium for the education of most of this class."

The superintendent at the close of his report concerning the articulation work in 1870 says: "The progress made is encouraging and is especially gratifying to relatives. This department is not yet permanently established in this or other institutions in this country; but it is believed that a portion in our large schools can be so instructed, with profit."

For ten years Miss Eddy was the only teacher in articulation. During this time a correspondence was continued with Miss Rogers from whom she received valuable aid in regard to details of instruction. She was also sent to Jacksonville where Miss Cornelia Trask taught her the Bell system of visible speech, a knowledge of which she herself had then recently acquired in Hartford.

While always pursuing the system, Miss Eddy did not after the first few years teach the symbols to pupils, but she esteemed its principles of great value in understanding the formation of elementary sounds and in correcting defective speech.

In the course of these early years, most of the pupils selected for oral instruction were semi-mutes and those who had once heard, even though losing their hearing before having learned to talk, as these were regarded more susceptible to such training. In the second or third year, after articulation teaching was introduced, about 1870, a class of semi-mutes was formed from those who could take the same grade of work, and their education was carried on by means of speech and writing, to the exclusion of signs.

The report for 1871 contains this testimony: "A few congenitally deaf or who lost their hearing so early that it has never been of practical benefit to them, have been a pleasing illustration of what can be done by faithful and protracted labor by teacher and pupil."

For several years, the policy pursued was to select pupils from the different classes, who spent one hour a day in speech and lip-reading—six in a class.

In 1875, this decision is given by the superintendent: "In reference to the matter of articulation, I desire to say that while the expectations of enthusiasts have not been, and will probably never be realized, there has been such success, wherever it has been intelligently undertaken, as to justify our course here," and a year later this statement is made: "We believe that at least

four-fifths of all our pupils can be best reached by means of signs."

Nevertheless, the work was surely and steadily advancing.

A second articulation teacher was added to the corps of instructors in 1878, and one oral class was formed taught entirely by means of speech. Miss Eddy continued teaching selected pupils from various classes.

The superintendent states in his report for 1880, as follows: "Special attention is given to articulation and lip-reading. Two teachers of experience, thoroughly familiar with the work, devote all their time to this department. As soon as pupils are found to be susceptible of vocal culture they are placed in some one of the speaking classes. It is not expedient to give all deaf children vocal training. Some are unable and others unwilling to learn; however, since fifty-five pupils in a school of one hundred and fifty-six are in speaking classes, the importance of this department is evident, and its perpetuity secured."

In 1886 another oral class was organized, with an additional teacher, in which speech was the medium of instruction.

From the autumn of 1886, until 1893, three oral teachers had charge of the articulation work. For several years of this time there were three oral classes, containing about thirty-five pupils using speech entirely, with fifteen or twenty others who had special instruction, twenty minutes or half an hour a day. In the fall of 1892, the oral department was reinforced by a fourth teacher, and in course of the year a fifth, so that during the past year oral work has been carried on in four classes where instruction by means of speech has been given to sixty or more pupils out of a total of one hundred and ninety-two in the school. Miss Eddy has given special drill to articulation pupils from two of the oral classes.

Each class generally numbers from ten to fifteen pupils arranged in two grades which have to be handled much as two grades in the same room would be managed in the public schools, one grade being occupied with written work, study, or reading, while lessons conducted orally on drill work with the other grade receive the special attention of the teacher. During the last year, one class of six, the oral section of the graduating class, had the uninterrupted attention of one teacher, furnishing good opportunity for drill and practice in the use of speech and lip-reading.

As to methods employed, these have been eclectic, rather than confined to any one system. Most of the teaching, however, has followed in the wake of that so ably begun and carried on by Miss Eddy for more than twenty-five years. Her method has been in harmony with the idea of beginning with the formation of elementary sounds, followed by drill in combinations, and as soon as possible, forming and making use of words and little sentences which express simple wants. At the same time, the children are taught to read these elements, combinations, words, and sentences from the lips, while learning to speak them. Then, as the pupil advances in knowledge of speech and language, continuing the unceasing drill necessary for correct and more fluent articulation.

By these various steps the articulation work in our school has come to be established on a solid basis. The results which our oral pupils have obtained, thereby acquiring superior advantages in their intercourse with hearing people, highly apparent to all, assisted by the example of some of our deaf teachers who are good talkers, have contributed towards banishing to a large extent the unpopularity which has sometimes been felt in regard to articulation by patrons and even pupils.

The progress not only in speech and lip-reading, but in the acquisition of language and ordinary branches of study, have proved the expediency of the oral method. We shall hail with delight and enthusiasm the day when it shall be possible to have a separate oral school; where the constant temptation to use signs with associates will be largely removed, and where spoken language will be the language not only of the schoolroom and with teachers, but also the language of the play-ground and study-room. For this we look to the future.

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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

THE TEACHING OF SPEECH IN THE HARTFORD SCHOOL

BY

MISS ADELIA C. FAY,

AND

THE HISTORY OF ARTICULATION TEACHING IN THE NEW YORK INSTITUTION FOR THE INSTRUCTION OF THE DEAF AND DUMB

BY

ENOCH HENRY CURRIER, M. A.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES
1894.

HARVARD COLLEGE
JUN 25 1897
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THE TEACHING OF SPEECH IN THE HARTFORD SCHOOL

BY

MISS ADELIA C. FAY

OF THE

HARTFORD SCHOOL.

THE TEACHING OF SPEECH IN THE HARTFORD SCHOOL.

Any description, if complete, of the method employed in the teaching of speech in the Hartford school will doubtless contain much that is repetitious and unsuggestive to those longer in the service than the writer. That Hartford's condition and attitude, as a promoter of speech, have been considered, upon the present occasion, worthy of consideration and scrutiny, is to her an appreciated recognition.

At the Hartford school, speech has, as its standard and goal, the practical use of it in personal every day affairs. Our work is not considered complete at the plane of mere sound drill and mechanical knowledge, but moves steadily up to that of spontaneous speech expression. We claim, that in our higher classes, intelligible, natural and accurate speech is being acquired by the majority of the pupils.

Of the thirty pupils added to the school since September, 1893, eighteen have been taught speech the entire year. Of the twelve not included, two were withdrawn, four came late, two were of adult age, one had already received eight years' training in an oral school, and three, after several months trial, were dropped for insufficient mental capacity. Ninety-eight of the total one hundred and fifty pupils have had daily instruction in speech. While there has been, for two years past, a slight decline in the percentage of pupils taught, it is also true that the teaching and practice of speech have at no time in the history of the school been so prevalent, so successful and so popular as to-day.

The work is naturally divided into Speech-Reading and Speech. The speech-reading classes, eight in number, are conducted by four teachers and are in session from eight to nine o'clock in the morning. The number of pupils in each class ranges from seven to eleven, the average being nine. This early

hour affords an opportunity for entire independence of classification, without encroachment upon the time of the manual classes, which are in session from nine to four o'clock. In these morning classes attention is concentrated wholly upon speech-reading, pronunciation, unless shockingly at fault, being overlooked.

These pupils also receive, in classes that assemble from half-past nine to three o'clock, drill in speech at half-hour periods. Three teachers are engaged in this work, the classes containing from four to six pupils. Careful development and correction of speech by all known arts, are then the leading objects of attention. Of course speech-reading, though incidental and secondary, is even then by no means omitted.

Two additional classes, of ten pupils each, engaged in special preparatory work, of decided promise, are in session each morning from nine to half-past nine o'clock.

In addition to the formal professional instruction in speech and speech-reading, as above recited, a co-operative spirit exists in the manual classes. In some, especially in those of the advanced grades, valuable suggestions and practice are contributed and afforded incidentally throughout each day. Difficult words are syllabified and pronounced, language, written upon the slate, is recited orally in concert, incidents are orally told and questions on lessons are orally put. This general participation and interest, not omitting to mention occasional household practice, has given to the pupils, a speech, more reliant and ready, and, to the art itself, a genuine popularity and dignity.

In the teaching of speech, the element method is and has always been rigorously adhered to. In our speech classes tongue gymnastics and exercises for continuity are in vogue, to a greater or less degree, as the classes move upward through the course. The Northampton drill-chart is a constant friend, often tried and never found wanting. Little attention is given to reading continuously from books, the admitted advantage, the enlargement of the child's vocabulary, being a result easily attained at other times and in other ways, with no sacrifice of natural speech and practice in speech-reading, both of which, almost, if not wholly, disappear in the effort of reading. We prefer that our pupils relate, in their own language, incidents of the day, items of news, stories read or within their knowledge. During the past year some of the advanced speech

classes have had drill in the recitation of poems. Intelligible and successful rendering has required, from the pupil, continuity, correct accent and emphasis, as well as rhythm. In this way, the points essential to a good speaker have been sought and measurably achieved. The same classes have also had drill in columns of long and difficult words for sight-reading and accent.

Our foundation work in speech, for the past two years, has followed closely the admirable plan devised and perfected at the Clarke Institution, and called technically "Preparatory Work." Lack of time has prevented the execution of every detail of the work, and yet, in our results, our hopes have been more than realized. Through the drill in motion, color, form, number, and touch, exercises in themselves, as various and delightful as valuable, the children have gained remarkably in observation, alertness and concentration, and to the teacher has come the realization of the value and necessity of "unity of action," as distinguished from that of individual pupils. The Northampton head-chart, preceded by the free-hand drawing of the child's own head, has been most helpful in securing a clear and rapid conception of the positions concerned in the production of all elements, vowel and consonantal. Hand mirrors, for self-inspection, are in constant use, but not more so than the chart referred to. The Northampton vowel and consonant charts are preferred to the diacritical marks, formerly used, although the more advanced grades should be and are required to make themselves familiar with both.

I desire here to express, for myself and my associates, our warm appreciation of the kindness and help we have received from the principal and teachers of the Clarke Institution, realizing, as we do, that our success, whatever it is, is in large measure due to their ready assistance and practical sympathy.

This preparatory work, as described, has led the child, unconsciously, from the spoken element to the spoken word and command, long before the written form and the grammatical construction have become familiar to him. The spoken form, through constant repetition, is memorized, and, from the child, there comes a spontaneous effort at imitation, imperfect perhaps, but none the less of inestimable value, in fixing firmly in its mind the speech form, as a solid expression, without parts.

As illustrations of the whole work done, I here present specimen work of the class which has completed its second

year, and of the highest class. All the exercises presented are strictly uncorrected, without erasures or additions. Specimen work of the intermediate classes is omitted for the sake of brevity. The second year class, consisting of ten pupils, is the first which has had the preparatory work, so called, from the start. The following, an extempore conversation is the production of a boy, fourteen years old, deaf at eighteen months, with no speech whatever when he entered school in September, 1892:—

PUPIL : Joseph and I played marbles this morning.

TEACHER : Did you have many marbles?

PUPIL : No.

TEACHER: Where did you play?

PUPIL : In the yard, near the shop.

TEACHER : Do you like to play marbles?

PUPIL : Yes, very much.

TEACHER : Do you play at home?

PUPIL : Yes, I play with my brothers. We go in a boat on the water.

TEACHER : Is it a large boat?

PUPIL : No, it is small. My sister picked some lilies last summer.

TEACHER: Were they beautiful?

PUPIL : Yes.

TEACHER: Did they smell sweet?

PUPIL : Yes.

TEACHER: Did she carry them home?

PUPIL : Yes, she put them into some water.

For the sake of variety in language-work as well as in speech, the pupils, much to their delight, have been allowed occasionally to quiz the teacher. The following questions were asked by a girl, nine years old, a congenital :—

PUPIL : Did you pick the flowers? (Referring to some lilies-of-the-valley.)

TEACHER: Yes.

PUPIL: Where did you pick them?

TEACHER: In my yard, at home.

PUPIL: Did your sister give them to you?

TEACHER: No.

PUPIL: Do you like flowers?

TEACHER: Yes.

PUPIL: What is the flower's name?

TEACHER: Lily-of-the-valley (spoken, then written).

PUPIL: How many flowers have you?

TEACHER: Very many.

PUPIL: They are bells. They are white.

TEACHER: Do you want them? You may have them.

PUPIL: Thank you. I like them best. They are sweet.

he third illustration, from the same clsss, is an exercise in speech-reading, written by a congenital. It is a fair sample of the regular exercises written by the class, once a week, throughout the year. The custom of repeating the sentence but once was strictly observed in these exercises, as in all :—

Is it pleasant to-day? Yes.

Did I see a robin this morning? Yes.

Does the sun shine to-day? Yes.

Are the flowers beautiful? Yes.

Will I go home to-morrow? No.

Do I like candy? Yes.

Did I go down-town yesterday? No.

What is my name? Hattie.

What is your name? Miss Fay.

How old am I? Nine years old.

Did I go to the country yesterday? No.

Where is my father? At home.

How many brothers have I? Five.

Have I some sisters? Yes.

In the intermediate classes in speech-reading, short stories, incidents, questions on these, general questions, and drill in idiomatic phrases have occupied most of the time.

This work has, of course, varied in range and difficulty in direct ratio to the mental capacity and speech-reading ability of the pupils themselves.

I now present specimens of the work of the highest class. Three of this class of seven were congenitals, and four were graduated from the school in June. During the year they have had such topics as these:—Inventors, Famous Artists, New York Apartment Houses, Fables and Folk Stories, The United States Dead Letter Office, and striking current events from the World's Fair to the Coxey movement. That such subjects were not beyond their speech-reading ability was constantly apparent from

their written reproductions. There was abundant proof, too, of this in the spoken reproduction, at the time, by one of the class, the others watching intently and inserting any facts omitted. Here are two reproductions of a story, recently told the class. It was related connectedly and continuously, the only word written up, on the slate, being "sketch." In connection with the story, the teacher gave careful descriptions of a mummy and a lotus, wholly in speech, of course. The story, published recently in *Harper's Weekly*, the pupils had not yet seen. The first account is by a pupil fifteen years old, deaf at five, in school four years. She had forgotten her speech entirely and had no speech-reading when she came to us. The second is by a congenital, seventeen years old, in school nine years :—

A CURIOUS STORY.

This morning Miss Fay told us a very curious story, which happened to an artist, Mr. Church, in New York. He is a bachelor and lives with a friend of his own in a flat house. A reporter one day told him that he wanted him to draw the picture of a flower that grew in the Central Park in New York. The flower was called "lotus," and came from Egypt. The flower grew in a large pond in the park. He came to the park and met a policeman. The policeman told him that the flower would be in bloom the next day and then he would draw it. He decided to come to the park very early in the morning. He met the policeman and he told him there was a pair of boots in the park. He put the high rubber boots on and waded in the pond. If he sat on the shore perhaps he could not see the lotus well enough. That evening he came home. He was late. His friend was gone to bed. When he reached the house, his friend awoke and told him that there was a package for him on the table. He hurried to the place where the package was, to see what was in it. He opened it and found the head of a mummy. It came from Egypt. A friend of his own sent it to him. There was a note in the package which his friend wrote and said—"I have just returned from Egypt. I thought I would send you that mummy from that country, and I hope you will enjoy it, dear friend." Mr. Church did not care for such a thing as this, but he was very fond of his friend. He went to bed, but he had a restless sleep and unpleasant dream. He thought that the mummy was dancing at the foot of his bed. It frightened him very much. He got up and was much surprised to find his clothes wet. They were soaked wet. He did not know how they got wet. He got another suit of clothes and new shoes. He went to the park right off. When he got there, the lotus was gone. The policeman told him that another lotus would be in bloom soon. He went home to have breakfast. He was perfectly surprised to find the lotus near the mummy. We think he picked the lotus in sleep.

Miss Fay had a curious thing to tell us this morning. It was an experience with which Mr. Church met a few years ago. Mr. Church is an artist living in New York City, on the top floor of a flat house, with a friend of his. He draws pictures for the newspaper, *New York Herald*. A reporter of that paper once came to him and asked *him to sketch a lotus* growing in the pond in Central Park for his paper. Mr. Church

went to the pond to see this rare lotus. A policeman was there. The lotus grew away from the shore and Mr. Church could not sketch it from the shore well enough. So the policeman took him in a boat. The policeman told him that he could take a pair of long rubbers to wade through the water to where the lotus grew. When he got to his rooms he found that his friend had gone to bed. The friend awoke up and told him that there was a package on the table for him. Mr. Church found in it a note from his friend, who had been abroad to Egypt. In the note the friend said, " I have returned from Egypt and I send this mummy's head as a souvenir from that country." Mr. Church did not care for such things as mummies. He would rather get a pretty picture or anything that was useful, but he accepted it, because he was so fond of that friend. Then he went to bed, but had a very restless night and a disagreeable dream. He thought he saw the mummy's head dancing at the foot of his bed. Early in the morning, at five o'clock, he got up and went to the chair where his clothes were but he found them soaking all through. His shoes and stockings were also wet. He did not know how they were so. He put on another suit of dry clothes and went to the pond to sketch the lotus, but alas ! there was no lotus in sight. He wondered who picked it and asked the policeman about it. He said, " Well, never mind, another lotus of the same kind will soon come up and you can make a sketch of it." Mr. Church came to breakfast and after breakfast he went up to the reporter, who had asked him to sketch the missing lotus for him. He told him about the lotus being picked by somebody and asked him to wait till the next lotus came up. Then he went to his rooms and there he saw the picked lotus stuck on the head of the mummy. He wondered if he got up in his sleep and went to the pond after the lotus. It was a strange coincidence, for the mummy and lotus both came from Egypt.

The hardest test to which the class has been subjected, from time to time, has been the firing, at random, of questions, absolutely independent and disconnected. To grasp successfully and successively such questions calls for skill and alertness of the highest order. For example:—

Have you found my scissors ?

Did you fill your mother's coal-hod before you came to school this morning ?

How did you enjoy the concert last evening ?

Do you know that kind of a neck-tie is not fashionable now ?

When do you suppose your steamer will sail for Liverpool ?

Did you go down stairs and get the hammer and tacks for me ?

Such sentences, like all others, were spoken naturally and seldom repeated more than once. Imaginary errands were found to be of practical benefit, such as:—

Eddie, go to the grocery store and order a peck of sweet potatoes and a dollar's worth of white sugar. Have the orders put on my bill and please ask the man to deliver the goods before dinner.

James, please go to to the jewelry store and tell Mr. ——— that the main-spring to my watch is broken. Tell him I want

the watch repaired and thoroughly cleaned. Be sure to ask him when it will be done and how much it will cost.

Special delivery stamps have been bought and telegrams sent correctly. The ingenuity, invention and imagination indispensable in this exercise made it as enjoyable and amusing as it was stimulating and useful.

An occasional half-hour was devoted to practical problems in Mental Arithmetic.

We resort to games occasionally for the sake of freshness and variety in the reading of each others' lips. For the beginners we have a "Word" game, as fascinating and attractive to them, as the Geographical, Historical, and the Natural History games are to the older pupils. No play-circle is more interesting, as round after round, they try to guess the secret word, written by one of the class. Any repetition of a word counts one against them, and three such marks rule them out of the game, so, by temporary exclusion, reducing inattention and dullness to a minimum.

Outside of school-hours Conversation teas and Speech-reading matches have both had their places with gratifying results. At a candy-pull, without suggestion at making speech compulsory, the majority of the participants of their own free-will and choice, breaking away from the ordinary forms of expression current in the household, used speech most of the time. Individual pupils in every class, more so in the older classes, may frequently be seen memorizing their lessons, not by signs or finger-spelling, but by oral repetition.

Such exhibitions, and others that might be mentioned, demonstrate clearly and forcibly that speech, at the Hartford school, has risen above the plane of mere mechanical effort to that of practical use. It contributes constantly and substantially to the mental awakening of our pupils and is to most of them a genuine pleasure, which they are very loth to forego.

Hartford claims, for the majority of her present graduates, sufficient familiarity with speech-reading and speech to make them feel at home with their families and their hearing friends. Their voices will be agreeable and intelligible and their social life will be broader, happier and more useful. They will mingle more freely and more intelligently with the general hearing world, conscious of and grateful for a substantial bond of union, not possessed by those untrained in speech. Their social importance will not diminish, but steadily

grow, and, in such growth, their speech will prove to be a factor of actual and enduring value.

As has been cumulatively said, by an accepted authority, "These earnest and persistent endeavors, when properly, conscientiously and intelligently made, will be followed with gratifying success in the majority of instances"—at Hartford as well as elsewhere.

THE HISTORY OF ARTICULATION TEACHING IN THE NEW YORK INSTITUTION FOR THE INSTRUCTION OF THE DEAF AND DUMB

BY

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NEW YORK INSTITUTION FOR THE INSTRUCTION OF THE DEAF AND DUMB.

THE HISTORY OF ARTICULATION TEACHING IN THE NEW YORK INSTITUTION FOR THE INSTRUCTION OF THE DEAF AND DUMB.

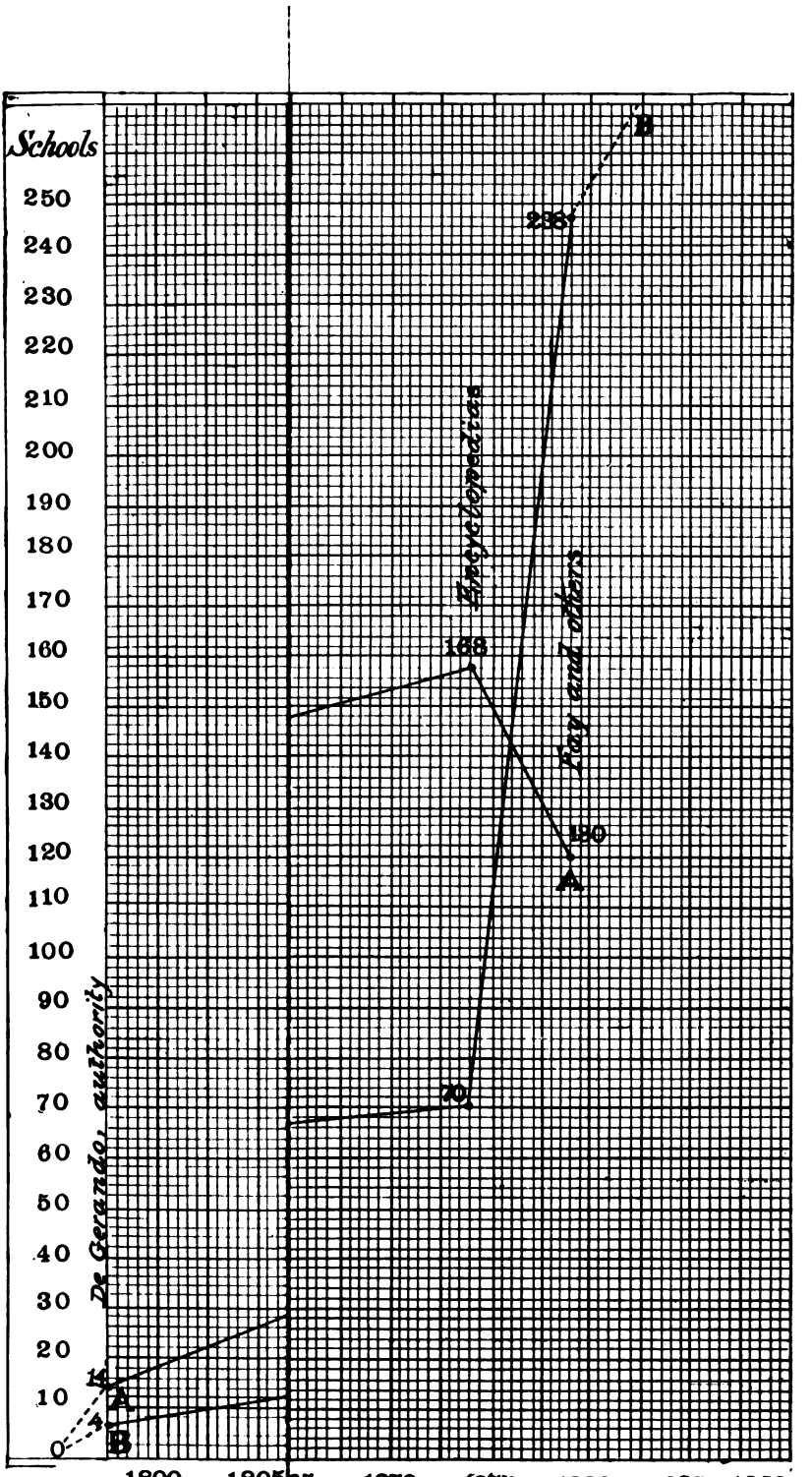
It may be in the nature of a surprising statement to many present at this assembly that articulation teaching at the New York Institution traces its origin to the very beginning of the scholastic work. The original policy which controlled the Institution had, with regard to the instruction of its pupils, two distinct objects in view. The first was, to instruct them where deafness had been confirmed in childhood, and it was impossible to have them taught in the usual way; and the second was, to have such attention paid to the organs of hearing, as to give the pupils every chance of restoration. The promulgation of this policy as the basis of their system will be found among the first public declarations made by the directors.

As early as 1819, this policy went into effect, following upon the report of a committee of the directors appointed for the purpose of determining the merits of what are now known as Oral and Aural instruction. The results of their investigation were expressed in the opinion that "the pupils who are restored to hearing are not, of course, enabled to understand the meaning of sounds. This is the result of social intercourse. The ear must be gradually accustomed to know and estimate the tones and vibrations it receives. So it is with the organs of speech. They are brought into action, by imitation and practice; and this, too, is an exercise connected with the presence of our fellow creatures. It is believed that the art of comprehending articulate sounds, and of giving them vocal utterance, can be best acquired in the way of direct and scholastic practice. This is recommended as a novel and important part of the system of education of the deaf and dumb, who, after long

incapacity are finally freed from their obstructions, but still require information as to the significancy of spoken language when addressed to them, and of the use of it as a medium of communication with others."

In accordance with this recommendation, Dr. Samuel Akerly, one of the earliest and most efficient friends of the Institution, of which he was, for ten years, at once a physician, secretary, and superintendent, and also, in 1821, the compiler of a work entitled "Elementary Exercises for the Deaf and Dumb," conducted a careful examination of sixteen pupils of the Institution and after ten weeks, steady and laborious attention to these sixteen cases, he concluded that *six* of them had improved in their hearing and might be removed from the Institution and taught like other children at an ordinary school. He recommended that, with this purpose in view they should have less intercourse with other pupils, and be exercised in the rudiments of spoken language, beginning with easy words, and gradually proceeding to those of two, three or more syllables, finally to short and easy sentences. By this method they would speedily obtain a knowledge of sounds, and have confidence enough to make effort to speak, whereas, under their present environments, though they heard they did not speak, for the want of that knowledge; they continued rather, to express their ideas by signs, as, from long practice, it was much easier to do than to exercise their vocal organs. He further recommended that they should be exercised more in elocution, and less in gesticulation, otherwise they might forever remain mutes, notwithstanding their improvement in hearing.

Following out, in a general way, the recommendation thus presented, the first teachers in the New York Institution, both Mr. Lootborrow and the Rev. Dr. Stansbury, who had employed more or less articulation in their instruction from the outset, adopted what was then known as the English system. They endeavored, with the aid of Watson's "Instruction of the Deaf and Dumb," to teach articulation, at least to such of the pupils as retained a remnant of speech or hearing. The teachers, however, were ill acquainted with the methods required for the work, and the results, as might be expected, were unsatisfactory. After trial the experiment was abandoned. Several of the pupils, ed, acquired the ability to articulate by difficult and painful



WORLD.

"A A." AL MEANS OF INSTRUCTION.
"B B." " " "

efforts, a few simple sentences, but in a tone so harsh and indistinct that it was both unpleasant to hear, and difficult to comprehend. After a time, the attempt was, by general consent given up; and the teachers, having secured from France, the works of Sicard, endeavored, to the best of their ability, to adapt his system to the structure of the English language, and the circumstances of their school.

The direct cause of the setting aside of the articulation method used by the first teachers at the New York Institution was, that, pending the erection of new buildings for the Institution, in 1827, the Superintendent of Common schools, who had been specially commissioned to institute a comparison between the New York school and the two others in the neighboring States, had discharged the duty assigned him by visiting and carefully inspecting the schools at Hartford and Philadelphia. In April, 1828, this official made to the Legislature a detailed and very able report in which, judging from the results obtained in each school, a very decided preference was given to the system pursued at Hartford and Philadelphia. There had been but little intercourse between the schools, and the directors and teachers of the New York Institution had supposed that their own success was equal to that of others; but the verdict of a competent judge awakened them to the necessity of placing their school on higher ground. No sooner, therefore, was the labor, which had for several years engrossed a large portion of their solicitude, crowned with success by the completion of new institution buildings, than the directors turned their attention to the nct less important object of securing a full corps of able and experienced teachers, and of shaping their system to more fully accord with the recommendations of the special Committee.

This first attempt of articulation was not, perhaps, con tinued a sufficient length of time to fully test the practicability of success, or to determine the expediency of incorporating this instrument into the general plan of instruction. At the time alluded to, in fact, there existed in this important particular, nothing like unanimity of opinion among instructors either at home or abroad. The art of instructing the deaf had not settled down upon certain fixed principles; its theory, even, had been but imperfectly outlined and the results of experiments had been but partially collected and compared. The attempt was, therefore, necessarily

abandoned in order to avoid, in the infancy of the establishment, any measure, which, in the minds of its friends, might be of doubtful utility.

However, the efforts looking toward aural development among the pupils were not wholly abandoned. Dr. Akerly gratuitously instituted a series of experiments to ascertain whether the hearing of the pupils could be restored, or materially improved, by skilful medical treatment. The small success of the praiseworthy attempt discouraged its continuance, and it was not until within the past ten years that the subject of the special instruction of pupils with defective hearing was resumed, and placed in charge of the present principal, under whom, it is not too much to say that, most satisfactory results have been attained, with the prospect of accomplishing even better work in this line of instruction. That the school had not reached a final decision against articulation became manifest within a short time. Two years subsequent to the introduction of the French system, the President of the Institution, The Rev. James Milnor, D. D., was sent abroad to make a personal inspection of European schools for the deaf, with special reference to the value of teaching articulation to the deaf. As a result of his recommendations measures were taken to re-introduce this branch into the school on the same lines that were employed in the schools of Watson, Vaughan, and at Paris, and matters thus continued for three years.

About this time, in 1833, the Institution, under the administration of the elder Peet, began to evolve a distinctive system. Methodical signs were abandoned as an instrument of instruction. The means on which the principal reliance was placed were actions, writing, symbolic grammar, design and the manual alphabet. The employment of words, themselves, was considered preferable to that of signs instituted for the sole purpose of recalling the same words. The utility of articulation in conjunction with the power of reading lips was no longer questioned so far as New York was concerned, and increased facilities were offered the pupils to acquire the power of articulation.

While the place of articulation as a definite branch of instruction was thus permanently fixed in the school, as a result of further experiment and investigation, there gradually arose a question bearing upon the relative merits of the plan of teaching *articulation* and that which confines itself entirely to written

language. Both plans were favored in the school by eqaully conscientious and eminent instructors. Here it may not be out of place, considering the early date at which the question was brought forward, and, furthermore, considering the influence the decision reached, had in shaping the methods now employed in the New York Institution, to give in full the arguments which led to a final decision. The *raison d' etre* of this investigation begun in 1840, as, the Principal Dr. H. P. Peet stated "to examine a little in detail, the considerations which bear upon the relative merits of the plan of teaching articulation and that which confines itself entirely to written language. In doing this, it is by no means necessary that we should pronounce the condemnation of either, since to neither are we opposed, in cases to which, from peculiar circumstances that may seem peculiarly adapted, the object of the inquiry is rather to distinguish what may be the circumstances which give, in some instances, a fitness to one of the methods, which the other may not possess for those in a less eminent degree, were we to pursue the investigation with any other object, we should go back to the ranks of controversialists, by whom, even less than half a century since, the true philosophy of our art was involved in a maze of uncertainty and confusion.

"We need not hesitate to state, therefore, in the outset, that we ourselves, in common with many others more able than we pretend to be, have heretofore avowed the conviction that there are many cases in which articulation is easily practicable, and therefore desirable that it should be cultivated; while, for the most part, we have in our practice, taught language in a visible form. We have avowed, and see no reason to withdraw the avowal, that it seems to us by no means impracticable, in the same institution, to unite for different classes of persons, the advantages of both methods. Their antagonistical character, no longer for us, seems of necessity to exclude either from the institution in which the other is at the same time vigorously practiced.

"Let us first, then for a moment give our attention to the advantages which may accrue, from giving to deaf-mutes the power to articulate like their favored fellow-men; and, in turn, to read upon the lips of those with whom they converse, the words which are addressed to them.

'Considering the painful privation under which a human being must labor, cut off from all means of intercourse with others, through the channel of sound, we need hardly say, that whatever tends to alleviate this misfortune deserves our most careful attention. It is calamity enough, even supposing ourselves perfectly successful in imparting this proposed control of the voice, and this faculty of distinguishing motions so almost imperceptible as those of the lips, that still our pupils are insensible to all those pleasures which flow in upon the soul through the ear. It is calamity enough that all the sweet sounds of nature, all the charms of melody and harmony, the soft and soothing words of friendship, and the tender tones of sympathy in suffering, must still remain forever unknown, and forever unenjoyed by the objects of our solicitude. Yet, though the delights of which this sense is a medium are hopelessly unattainable for them, still, if we can enable them to avail themselves of their highest uses in the business of life, we place them on an immeasurable eminence above those who have no resource for their expression of their thoughts but the tardy pen, and who are often thrown into situations where even that seems next to useless.

"The *rapidity* of speech is one of the prominent advantages of this mode of communication. It enables the possessor of the faculty to compress much into a space of time so brief, as to multiply beyond calculation the sources of information presented in the daily intercourse of life. This, to the deaf-mute, is an advantage which need not be enlarged upon. The school, to him, is far from being the sole arena of his education, and his lifetime the duration of his instruction. This, indeed, is true of all; and it would not be named here, but for the fact that of this class of persons it is so, to a degree beyond any comparison greater than it can be of any other. But in another respect this dispatch is of the highest importance. There occur moments when time is indeed more than gold; moments when delay is full of danger or attended with serious inconvenience or injury; when communications of the greatest importance must, if made at all, be made almost instantaneously. Writing can rarely fulfil on such occasions the province of speech.

"It is another advantage of articulation that, by means of it we may communicate when the hands are employed, or when the materials for writing are unattainable. No foresight can al*together avoid* exigencies like these; and whenever they obviate

the occasional inconveniences of this nature which must occur, we could not hesitate to pronounce the attainment of articulation highly desirable.

"Moreover, there are many, even among our own generally intelligent countrymen, who are incapable of using the pen; with them the deaf-mute can have scarcely any intercourse whatever. And yet it is with such that he must come in contact, often, in cases in which it is of the greatest importance that he should make known his wishes. Servants and laborers, and a multitude of those with whom, in travelling from place to place, it is necessary to converse, are of the class most likely to be deficient in the kind of knowledge most important to him.

"Many, too, though not unable to write, are so extremely inaccurate in their orthography, that to one unacquainted with sound, their words seem almost a foreign language. This is an evil of immense magnitude to the deaf and dumb. Even persons who pass for educated, are often, in this respect, shamefully ignorant.

"What must it be without those whom the deaf-mute, in numberless instances, is destined to meet in the bosom of his own family?

"Not, however, to go into a tedious enumeration of all the advantages of articulate language over writing, advantages in general too obvious to require to be stated, no one, we may safely assert, can be so unreasonable as to deny that, if practicable, these advantages should be thrown open to the deaf and dumb.

"*If practicable,* therefore, we conclude that the deaf-mute should be taught to articulate. We must carefully examine in this case, the full meaning of the word practicability. Suppose a pupil to manifest just such an aptness for acquiring this species of knowledge as by constant application during the period allotted to his education, he may be taught to speak and read on the lips of others, a limited vocabulary of words. Suppose, too, that he articulates imperfectly, as, except after very long practice and very persevering correction, he will often be likely to do. Suppose on the other hand, he reads more imperfectly still; for this latter art is of more difficult acquisition than the former. Will such an one, on leaving school, possess

a knowledge of spoken language sufficient to make the advantages we have already enumerated his? Will he be able to communicate with the rapidity, which is one of the most valuable properties of articulate language? Will not, on the other hand, the necessity, continually occurring, of repeating and repeating his own words, and demanding a similar repetition from others, render the use of this imperfect faculty irksome in the extreme? And if, moreover, in the long period of close application necessary to acquire even the little he has to boast, his mental cultivation should have been, as of necessity it must be, to a great degree neglected, can he be said to possess a fair equivalent for what he has lost, for such an one can we, therefore, reasonably say, that instruction in articulation is *practicable?*

"There evidently must be, then, a limit to the extent to which this mode of education is pursued; for when we recollect in how very many cases, even of those in which this painful labor of teaching articulation is not attempted, but in which every moment of time is devoted to the development of ideas and giving them names, the fruit of all our toil is but insignificant at last, we cannot but acknowledge, that there would be many more, in which, to essay the greater undertaking, would but result in similar disappointment.

"On the other hand we find some who, having lost their hearing at a period of life a little advanced, have still retained nearly or quite in perfection the power of articulation. For them there is no need of special instruction in this particular, and it is certainly desirable that they should not be allowed, by total disuse, to lose, as without practice they will lose, so valuable a possession.

"There are some, also, who, without being able to articulate, still retain some degree of hearing. These, too, if apt learners, may, with propriety, be instructed in the use of the voice.

"There remain, finally, perhaps a few, who with neither of the advantages just named, from their uncommon docility, may, with some pains, be enabled to attain the benefits of articulate language, but of such it seems to us the number must be limited, for whom within the period ordinarily devoted to education, it will be impossible to make such acquisition. It would appear that trial is unnecessary to ascertain, in regard to any one, the fact. Should the prospect prove unpromising it would be, in the *highest degree*, injurious to his best interests to allow him to

proceed. All time spent in this pursuit, should the object remain unattained at last, is so much time thrown away.

"In theory it may be true, that the instruction of the deaf and dumb is only carried to its highest degree of perfection, when the pupil has been introduced to a knowledge of the language of his country, not only in written form, but also as it is spoken by those who hear. But practice must be made to bend to exigencies, interposed by circumstances beyond the power of the teacher to control. Of these, the principal are the limitation of time, and the varying abilities, as well as physical organization of the subjects of instruction. For the great mass of the deaf and dumb in our country, it would seem that we have no choice but to teach them words under their visible form."

Such were the considerations and deductions that influenced the greatest Principal the New York Institution has ever had, in his decision to employ articulation when practicable, while still continuing to teach language under a visible form. This has been, and continues to be, the keystone of the system of instruction employed at Fanwood.

Some ten years subsequent to the formulation of this expression of policy, in consequence of the impression produced in the public mind, to the disadvantage of the American Institutions by a report put forth by a no less distinguished visitor to the European schools than the late Honorable Horace Mann, the Board of Directors of the New York Institution, with its usual liberality and determination to obtain and adopt the best possible system of instruction, in 1844, sent a special agent to examine critically the European schools for the deaf, especially those in Germany, and report the results of these investigations. The gentleman selected was the distingnished instructor, Rev. Dr. George E. Day, at present a professor in Yale University. In reporting his conclusions he says: —

"In view of the actual results of the German system, and the serious disadvantages which attend it, I can by no means agree with the opinion expressed by a late American writer, that the schools for the deaf and dumb in Prussia or Saxony are superior to our own, or recommend the German mode of instruction, the *German method has advantage for the few;* the American method for the mass. In attempting to teach all, or nearly all, to employ oral language, the German schools succeed

in obtaining solid results with only a select number, while a large portion of the scholars are seriously impeded in their progress by the process."

Again, in 1851, Dr. Harvey P. Peet, the President of the Institution, while making an extended tour of Europe, visited many of the articulation schools. In speaking of the teaching of articulation he says:—

"On this head, I can but repeat and confirm the views expressed in the able report of the Rev. George E. Day, made to the Board seven years ago."

Ten years later Professor Day at the instance of the Directors made a second examination of the foreign schools where articulation was extensively taught, with the view that the school might profit from any additional improvement in this branch of instruction. He reported that; "A certain portion of deaf-mutes may, with a sufficient expenditure of time and labor, be taught with more or less advantage, to articulate mechanically and to read from the lips. This class consists of semi-mutes, mutes who become deaf after having once learned to speak, and now and then those who possess special aptitude, mentally and physically, for this kind of instruction.

"While the teaching of articulation and the labial alphabet should be confined to the proportionately small number of so-called deaf-mutes, who are specially qualified to receive it, no pains, on the other hand, should be spared in faithfully laboring, to teach this peculiar class to speak and read upon the lips. Experience shows within the limits which have been described, its feasibility. Every consideration of justice and humanity requires that the means should be used with the most steady and conscientious diligence. If the unfounded assertions and exaggerated statements of persons, who are either interested witnesses or else incompetent judges, shall have the effect of calling attention to the duty of providing special instruction in oral language for the limited number of the deaf and dumb who will surely be benefited by it, an important and desirable result will be secured."

In order to carry out the recommendations of this distinguished teacher, the directors spared neither time nor means to give the instruction in articulation the fullest possible opportunity to produce its best results. For years, several of the teachers had given time and labor to this subject, but it was believed

that better results still were attainable, and accordingly efforts were made on a more extensive scale, and in a more systematic manner to improve the ability of the pupils to speak and read the lips. To facilitate this object, the Committee of Instruction, in September 1867, authorized the Principal to confer with some intelligent young man who had had a thorough medical education, with a view to his becoming a professor of articulation in the Institution. The reason for selecting a physician rather than a non-professional man, was the great advantage arising from a knowledge of the anatomy and functions of the organs of speech. He might thus discover important principles which would make the Institution in this respect, as it desired to be in every respect, foremost in its specialty. It was very difficult to at once find a man possessing the desired qualifications for such an important post, and while awaiting the discovery of an instructor of the desired character, O. W. Morris A. M., the most experienced of the professors, and who had heretofore paid considerable attention to this subject, was appointed instructor *ad interim* in articulation and lip reading.

Before the close of the year, the special teacher of articulation was temporarily secured in the person of Dr. Orrick Metcalfe, a physician of talent and thorough medical education, and to him were assigned, as assistants in the work, three of the most intelligent lady teachers. In addition to his labors, he entered upon a course of examinations and experiments, having for its object, to test more fully than had yet been done the interesting question, whether the hearing of some of the pupils could not be restored; or, at least, so far ameliorated that they might become able to distinguish the human voice by the aid of some sort of acoustic apparatus.

On the resignation, in September, 1869, of Dr. Metcalfe, the Board of Directors secured the services of Professor Bernhard Engelsmann, a gentleman from Germany, who had made himself familiar with the theory and practice of instruction in this especialty which were in vogue in that country. Assisted, in his department, by the three ladies associated the previous year with Dr. Metcalfe, he also had the co-operation, during a portion of each day, of seven of the other teachers in the Institution. The experiments in aural surgery, initiated by Dr. Metcalfe, with a view of ascertaining whether the condition of any of the

pupils offered any reasonable hope of their restoration to hearing, were continued by Dr Rodenstein, the attending physician.

The school of articulation and lip reading thus established under Professor Engelsmann, assisted by Misses Meigs, Hamilton, and Ransom continued, and showed remarkable cases of proficiency, both in speaking intelligibly and in reading readily on the lips, including some who were deaf from birth. Beginning with fifty pupils, the number was increased, as, by degrees, it became evident that a greater portion of the pupils were capable of deriving decided benefit from vocal exercises. In addition to his regular duties as principal teacher in the articulation department proper, Professor Engelsmann gave daily attention to training the instructors of classes in the other departments, to teaching articulation, the object being to give such lessons to all the pupils in the Institution, devoting to each time enough to discover whether or not his capabilities were such as to warrant the expenditure of time and labor. It is but just to add in this connection, that by the continued employment of Professor Engelsmann, who eight years previously had introduced into this country the German system of teaching articulation, and who was considered to be its most experienced exponent on this side of the Atlantic, the Directors of the New York Institution offered the surest guarantee of their determination to place this important branch of deaf-mute education upon a foundation which should secure to the pupils the highest benefits it could confer.

In May, 1872, the Principal of the Institution, Dr. I. L. Peet, accompanied by the teacher of articulation, Professor Engelsmann, visited the schools in Hartford, Boston and Northampton to examine the system of Prof. A. Melville Bell which had recently been introduced by his son, Dr. A. Graham Bell, and through the courtesy of Dr. Bell, Miss Dudley, Miss Fuller, and later, the teachers at the Northampton school, they had an opportunity of thoroughly investigating the character and primary results of the system. The outcome of this visit was the introduction of the Bell system in our Institution with the opening of the academic year in September, 1873.

The German system previously employed being incompatible with the use of the Bell system, then lately introduced, Professor Engelsmann retired, taking with him the esteem of his co-laborers and the regard of the pupils and their parents.

Professor Weston Jenkins was placed in charge of the reorganized department, Misses Meigs and Hamilton continuing as assistants, and in two of the regular classes composed of semi-mutes or semi-deaf pupils, articulation and labiology, in connection with writing, were made the constant instruments of communication between the teacher and pupil. Thus it will be seen that while articulation and lip reading were not neglected they were not considered as a special means of intellectual development, but rather regarded as an acquisition valuable in itself, and not to be neglected in cases promising success.

During the last two months of the year 1874, Miss Carrie E. Handy, who had formerly been a pupil of Dr. A. G. Bell, was added to the staff of articulation teachers for the special purpose of initiating the teachers and pupils in the Bell method of illustration, the number of pupils in this department being increased to 122. The following year all the hearing teachers were required to spend a portion of each day in applying the Bell system to their classes, while the professor of articulation, except so far as he was charged with the responsibility of seeing that the instruction in this branch was scientifically conducted, confined his personal attention to the classes taught by those of the teachers whose individual deafness made it impossible for them to impart instruction in this branch.

This arrangement continued without any change, with the exception that, in 1877, the present Principal of the Institution became the professor in charge of the articulation department, and the whole number taught speech was increased to 161, or about 30 per cent. of the school. In this department, as well as in every other, the school was steadily seeking after higher success, in spite of all obstacles. Still, it was found advisable to recognize the limitation which ought to control the endeavors of every conscientious teacher. The inquiry obtruded itself: are there any reasons why deaf-mutes as a class, should not be taught articulation? Admitting the question of fact, that deaf-mutes who have never heard or spoken have been taught to utter words and sentences so distinctly as to be understood, is there any reason why the experiment should not be made with every deaf-mute, and abandoned only after all effort has been exhausted? And here the remark seems pertinent, that, making due allowance for the imperfection of every human, a work to be properly done, should be thoroughly done. No mere approximation should be accepted.

It was with these considerations and limitations in mind that the work under the new director was diligently pursued, and the results of the first year's work were submitted to a special Committee of the Board of Directors, at the head of which was the Rev. Stephen H. Tyng, Jr., D.D., one of the most enthusiastic members of the committee of instruction on the subject of articulation. He reported; "The examination of the class in articulation and lip-reading convinced your Committee, that so far as semi-mutes are concerned, this is an important department of instruction, and should be continued, as it has heretofore been, in the hands of an expert in this specialty. But in respect to the congenitally deaf, the Committee are of the opinion that the percentage of beneficial results are so small as not to encourage its continuance where it conflicts with other studies. The Bell system, which has been selected as presenting the most favorable results, is admirably adapted to aid the semi-mute in his efforts to recover the lost power of speech, and to cultivate the rare but invaluable gift of lip-reading."

The following year the results were more favorable and brought forth from the Committee of examination the expression that they were:—

"Profoundly impressed with the success of Mr. Currier's efforts and it is proper to remark, in passing, that there has been a very general testimony on the part of those who have visited different articulating schools that he has secured better results than are usually to be met with."

At the time this report was presented there were 130 pupils in this department under Prof. Currier, Prof. Jenkins, Miss Meigs and Mrs. Clarke. The object aimed at under the system of instruction pursued was not to increase knowledge of language, but to give an additional means of expression, one which would unquestionably be of some use to the pupils when they came to mingle with hearing persons. The principle of selection was to take pupils, not semi-mutes who had great quickness of perception, or who had such a remnant of hearing as would enable them to catch vowel sounds. The method of teaching might properly be denominated the syllabic, and owes its origin to Dr. I. L. Peet's studies in this direction. The consonants were all taught, not separately, but in connection with a selected vowel, and were made to depend on this for their utterance, as initials, or terminals, or both. The visible speech symbols of Dr. Bell

were at first employed, and the pupil was afterward taught to translate them into written equivalents. In practice the teacher first uttered a syllable, the pupil read it upon the lips, having written it upon his slate in symbols, pronounced it. The advantages of this system of teaching articulation, it was believed, were that it secured smoothness of utterance and a facility in lip-reading.

Upon his return from the second International Congress, held in Milan in 1880, Dr. Peet, suggested to the directors the advisability that a teacher of articulation be added to each of the two families of primary pupils, who had much time at their disposal which could be usefully employed in training them by the syllabic method. The opportunity would thus be given to every pupil to begin to learn articulation at the age most favorable thereto, at the same time enabling the teacher to tell more positively with what cases this practice should be discontinued after they had been advanced to a higher grade.

Rev. Dr. Charles A. Stoddard, the representative of the Directors at this congress, gave it as his opinion that "The results that have been obtained in Europe, and the great unanimity with which Continental instructors now urge and employ the system of articulation and lip reading as the best method of education, still more deeply impressed me at the Milan Conference, and I think the New York Institution will not properly serve the State in its great work, nor keep abreast of the public sentiment and demands in this matter, unless it shall establish and maintain a primary department of selected pupils who shall be taught entirely without the use of signs; in which the pupils shall speak only by articulation themselves, and be communicated with by no other medium than that of lip reading. In this way only, can we test the method which is now generally in use on the Continent, and learn its actual advantages and limitations. I am not by any means prepared to abandon our present teaching by the eclectic method—viz, the use of signs, the manual alphabet, the written language, and articulation, in combination or separately, as experiment shows to be best, but we may profitably use the experience of foreign teachers for the benefit of our own Institution."

In response to these recommendations special efforts were made to impart systematic instruction in articulation to the congenitally deaf, and the total number of pupils, receiving instruction in articulation increased to 224, fully 50 per cent. of all the

pupils in the Institution. In order to accomplish all that was possible for pupils of this class, two accomplished teachers, Miss Annie B. Garrett and Miss Elizabeth Mitchell were secured for the primary classes. Thus one hundred little boys, in a separate building at Tarrytown, and in the Mansion House at New York, besides the other boys and girls taught in the Main Building of the Institution, were taken at the very outset of their career to be thoroughly tested as to their ability to acquire this important accomplishment.

The teachers who gave their whole time to instruction in articulation had now reached six in number, and the Principal, Dr. Peet, with the professor in charge of articulation, gave most careful supervision to the work in this direction. The line in which experiments were especially directed, had reference to the possibility of effectively substituting a labial for a manual alphabet for the purpose of dictation. It was considered that the advantage to be derived from reading from the lips over reading from the hand, was that the deaf-mute who had acquired this ability could use it in following spoken sentences wherever he might be, and might thus be brought practically nearer to those who hear. By the application of certain rules devised by the Principal, it was found comparatively easy to teach the pupils to distinguish, by the eye, the movements of the organs made in pronouncing each elemental sound. The acquisition of this alphabet required much time, and constant repetition in the presence of the pupil of the twenty-seven consonant and nineteen vowel sounds. The result was that in every instance where this alphabet was mastered, the pupil could read the lips without guesswork, and could speak every word phonetically given to him. This principle established, it was applied to every pupil in the Institution, in accordance with the recommendation of Rev. Dr. Stoddard who, in 1883, as the result of his observations at the Brussels Conference, had reported:—

"As the result of my visit to the Congress and the deaf-mute schools on the Continent of Europe, I urge the Directors to extend oral instruction, and instruction in lip-reading to every child under our care. If, upon a thorough trial, it proves impossible in any case to teach a deaf-mute to speak so that he can be understood by hearing persons, or if from defective vision he is unable to read the lips, we can resort to the manual alphabet or the sign language for his instruction. With the results attained in Europe

by the oral method before us, it seems to me unwise and unfair to our pupils and to the State, to cling to the sign language as the best method of instruction. I would not advise the hasty discarding of the manual alphabet, but the opinion which I expressed three years ago, that the dumb should not be taught to make signs, but to speak and read the lips, is strengthened by my recent visits."

With the beginning of the fall term in 1883, the instruction in articulation was modified and improved by a most interesting discovery. Experiments had previously been made at the Institution with the Rhodes audiphone, and with the rigid metallic ear trumpet which surprised deaf people, who, without it, were absolutely unconscious of ability to perceive vocal sounds, but who were keenly sensible thereof when these sounds were uttered within its cavity. It was, however, reserved for the present Principal, at that time in charge of the department of articulation, lip reading and aural development, by an independent discovery to show that, through the flexible ear tube, fifty out of three hundred and seventy, or a little over one seventh of the pupils in attendance at the time, were not only able to hear the voices of others, but, for the first time in years, and, in most cases, in their lives, to hear their own voices.

The result of this discovery has proved of the greatest importance to us in aural instruction. It is not sufficient for the pupil to hear what is said to him. He must also hear himself say the same thing. In practical instruction, the teacher first speaks to the pupil, through the flexible tube inserted in his ear, and then requires him to transfer the mouth-piece to his own lips and repeat the words that have been spoken to him. This enables him to compare his own enunciation with that of his instructor and, after repeated trials, to imitate it with an approach to exactness. But for this, he would be entirely dependent upon the ear of his preceptor, to whom he would have to look for information as to whether he was speaking correctly or not. With it he can depend, in a great measure upon his own ear, and merely ask of his teacher that he repeat his words a sufficient number of times to enable him to make the necessary number of comparisons. Thus with the aid of the Currier Duplex Conical Conversational Tube, the professor in charge was enabled to give special instruction to fifty-three pupils who, left to themselves, were deaf and

dumb, but who began to hear, not with the prospect of gradually losing a weakened, but of establishing an awakened sense, and whose speech became more and more euphonious and correct. This education of the ear is greatly facilitated by uniting lip reading with it, for lip reading presents to the eye of the deaf person whose hearing is in process of development, the visible characteristics which enable him to make intelligent distinction between vocal sounds.

A special advantage of this aid to instruction was soon made manifest in the large number of pupils who were enabled to take advantage of the articulation teaching; 319 were taught lip reading, and 55 received aural instruction, the former being taught by eleven instructors, and the latter by four specialists, afterwards increased to five, all using the flexible conical tube. The effect of continued experiment in aural instruction was that an appreciable proportion of the pupils were discovered to possess a latent hearing, and, with the aid of the tube, they were brought to an aural recognition of spoken words and enabled to repeat them in a clear and correct manner. The great majority of these were unable on their admission to the Institution, to hear the words spoken in their presence, and therefore it was necessary that their hearing should be educated as well as developed. The results, in all cases, were very interesting, and, in some, remarkable. The ability of the toto-congenital deaf mute to acquire euphonious articulation is very limited, but that of those in whom hearing can be developed, or who acquire the speech of childhood before becoming deaf, can be made distinctly audible and agreeable.

The special efforts in the way of speech at this time were devoted to teaching every pupil in every class to read the lips of his teacher; to train him to place his own organs of speech in the same position with those of his instructor, as, day by day, he went through his drill, and thus bring him to true articulation. Instruction in these branches was no longer confined to selected pupils, but the benefit of participating in it, was given to all making it, it is true, not the main instrument of instruction, but an acquired means of instruction, useful in intercourse with the world.

Each of the pupils had a daily lesson in articulation and lip reading, with the exception of some thirty pupils in three classes in one of which oral and aural communication alone was used,

and in the other two, oral teaching was employed. I quote from the Principal's report. "The basis of instruction is the Bell system of symbols, constituting, as they do, a phonic alphabet, the successful mastery of which, we believe, will enable any deaf mute not only to pronounce audibly what he can write, but also recognize on the lips what is addressed to him in speech. In our opinion, to give the pupil an ability to pronounce distinctly, and to recognize the labial indication of all these sounds, is to enable him to speak and read the lips. This is done by collections of sentences in a succession of series, each series containing all the sounds of the alphabet. Lessons in reading are also given out for individual preparation, each pupil, noting, by means of his dictionary, the pronunciation of the several words in his reader, and endeavoring to enumerate the same with emphasis and distinctness. Much attention is paid to the modulation of the voice and its location, so that it shall be full, natural, euphonious, instead of being feeble, metallic, or harsh; twelve of the nineteen teachers give the whole or part of their time to the development of the pupils in this direction.

"Judging from what has been accomplished thus far, the great majority of our pupils will probably be brought to such a facility in lip reading that we shall be able to address them by slow if not rapid speech; and a less, but considerable number, will be enabled to speak in at least that metallic voice which is peculiar to those who have never had any degree of hearing; and fewer yet, assisted by present or past, but remembered hearing, will speak in a euphonious and agreeable manner. Meanwhile, we shall not blame ourselves for the failure which may result from these careful efforts to impart speech, as we shall endeavor to turn out intelligent pupils, who can, at least communicate with the world at large by writing."

From the record of 75 years, that has been here outlined, with regard to the articulation at our school, one thing must be evident to all—that the Directors of the New York Institution have given freely of their time, and used their means with a most enlightened liberality to obtain for their school the highest possible results in this branch of instruction. Since the time of Dr. Akerly, in the earliest years of the Institution, down to the present day, they have given careful thought in seeking after the *best possible means* for instructing those under their care,

and, as one of their number, speaking for that honorable body. recently remarked, referring to the Institution :—

"She is conservative, yet progressive, she takes no step backward, but seeks to grasp each new opportunity that may enable her to promote the welfare, and increase the value as citizens, of youth who flock within her walls for instruction, and depart from them to assume a place in the great World's struggle."

VI. 7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

EMMA GARRETT'S METHODS

BY

MISS MARY S. GARRETT,

AURICULAR INSTRUCTION IN THE NEBRASKA SCHOOL

BY

MR. W. E. TAYLOR,

THE WORD METHOD

BY

MISS KATE F. HOBART,

AND

THE ELEMENT METHOD

BY

MR. E. S. THOMPSON.

ROCHESTER :
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

HARVARD COLLEGE
JUN 25 1897
LIBRARY.

EMMA GARRETT'S METHODS

BY

MISS MARY S. GARRETT

OF THE

HOME FOR THE TRAINING IN SPEECH OF DEAF CHILDREN
BEFORE THEY ARE OF SCHOOL AGE,

PHILADELPHIA.

EMMA GARRETT'S METHODS.

Emma Garrett's methods for accomplishing the work that lay nearest her heart,—viz., speech for the deaf,—were very simple, and as logical as they were simple. I will state them as nearly as possible in her own words.

In 1882 in a paper which she read before the Tenth Convention of American Instructors of the Deaf held at the Illinois Institution at Jacksonville, and entitled "A Plea that the Deaf-'Mutes' of America May be Taught to Use Their Voices," she said: "My theory has been that the children should be treated just as hearing children, except that we must reach their minds through the eye instead of the ear, and my practice has been in accordance with it." At this time (twelve years ago) she had been in the work four years, having graduated under Professor Butterfield,—Dr. Bell's representative in Boston, in 1878, and number one in a class of twenty-one. She always held that the loss to deaf children in not being so treated *from birth* was irreparable, and that every deaf child had not been given a chance to learn to speak until they were all so treated. She said it was as unjust to them to deprive them of this as it would be to deprive a portion of hearing infants of the ordinary opportunities at the natural age and then discuss what percentage of the poor little victims could learn speech.

For years she labored to have parents of deaf children do this for them, but she found that, for a while at least, until they and the public can be made more generally to realize that it *can* be done, it must be done for them. She therefore determined to devote herself to this branch of the work, and in June, 1891, she resigned her position as Principal of the Pennsylvania Oral School for the Deaf at Scranton, and in the following February she opened the "Home for the Training in Speech of Deaf Children before they are of School Age" in Temporary Quarters, in Philadelphia. To this Home she admitted children at any period between the ages of two and eight, giving them

a six years' course from the time of entrance. In order to give them the speech and language which would bring them into genuine communication with their families and others which they cannot otherwise have, she decided that the training must be uninterrupted by vacations, just as one learning to talk was uninterrupted, but she permitted their parents to visit them whenever they wished.

She arranged that every condition of the home life should guide the children to speech and language as nearly as possible in the same way as we were guided and trained. Most of the children have entered nearer the maximum than the minimum age, and even those who enter at two lose something that the mother might have given them if she had only thought so, so that while she felt that the establishment of these homes is the next step in the improvement of the Oral Method for the Deaf, she hoped that in a generation or two each mother and family might do the work for its own child.

She held that they should not only be surrounded with constant speech and only speech as we were, but that it should be rapid and natural speech. Her method may be called "the sentence method." She discarded the single element method early in her work because, she said that when the elements were combined in words and words into sentences, the organs of speech so quickly relinquished one position to take another that the blended sounds looked different, and that it was better for the children to learn how they looked as actually used in words.

She used the syllabic method, for which she prepared an excellent drill, for a time, but discarded that for approximately the same reason.

In the Seventh Annual Report of the Pennsylvania Oral School for the Deaf at Scranton, she refers as follows to Prof. Bell's Visible Speech symbols: "I formerly taught my students (referring to these she trained as teachers) Bell's ingenious symbols for action of vocal organs in the production of speech sounds. I now omit 'symbols' because they are not in current use for the hearing. His symbols are, however, superior to our alphabet, in that there is one for every sound. Holding still to his valuable consideration of the formation of speech sounds, I feel that I give all that is essential—so long as our present alphabet and diacritical marks are used by the hearing.

"It has seemed to me a rather mistaken idea to place the value of the Bell system in the 'symbols' rather than in A. Graham and A. Melville Bell's correct ideas about the mechanism of speech. If we understand the important part of the system, viz., the formation of speech sounds, the symbols are easily acquired."

In regard to writing she was of the opinion that it should not be taught (except as a mechanical exercise) until the speech habit is sufficiently confirmed for the child not to be tempted to use it instead.

In the Report above referred to, she also says: "I cannot omit in this Report what has ever been the burden of my song, that time out of school hours is as important as time spent in school for the proper development of the deaf child.

She always advocated small schools for the deaf and claimed that if deaf children were given as much chance from birth to learn speech and language through the eye as hearing children have through the ear that there would be little or no necessity for special schools for them. She said the occasional statements that come from orally trained persons expressing disappointment in their education were to be attributed to the fact that the loss of the proper training at the natural age, or some other flaw in their training, made it imperfect.' She did not use the system of examinations but required frequent reviews which revealed to the teacher the weak points of each pupil that they might be taught what they lacked.

A full idea of Emma Garrett's methods can not be given without some reference to her daily and hourly efforts to advance her pupils in everything that was good and pure. I quote again from her last Report of the Scranton School. She says: "Our six teachers have all been faithful in their classroom work. I want to carry with me the feeling that they will ever be deeply interested in the spiritual growth of their pupils. Teaching them to do right because right is right and not through fear of punishment. Teaching them to do their own thinking, and be true to their convictions. Seeking to get expressions of opinion from them—meanwhile guiding them to high ideals; making them understand that to stand neutral may be as bad as to take the wrong side—in that it may aid it. Make them know that a character without a basis of truth is powerless for good; urge them to it. if needs be, through suffering."

Again in the same Report, referring to prizes given to pupils at the end of term,—the reasons given for bestowing them to the several recipients show how carefully she studied each case; some of these are as follows:—

"To ELLA WEBBER, a watch for measure of success she has attained since entering school (under disadvantage of ill health, causing irregular attendance which is particularly detrimental to the progress of the deaf); in naturalness and smoothness of speech, language, lip-reading, general knowledge, and for having won the testimony from a student who watched her six months in our day school: 'I never saw Ella Webber make one sign.' Her kind heart expressing sympathy with happiness and sorrow, and the influence she has always exercised over our pupils for good, have endeared her to directors, principal and teachers. We should like Ella's prize to be an incentive to her to exercise increased care in the several lines mentioned."

"LYNN CLARK, a bound copy of *Wide Awake* for regular attendance (he is a day pupil) and for interest in his studies. His nervous trouble has made it difficult for him to have control over his speech. We trust the prize will inspire him with a wish to improve his speech, remembering that 'obstacles are things to be overcome.'

"To DAVID LINDER, a watch for improvement of tone of voice, lip-reading, language and in all his other studies,—U. S. History, Geography, Physiology, Arithmetic, Spelling and Writing.

"To MARGARET SCHMITTLAPP, a bound copy of *Wide Awake* for improvement in language, U. S. History, Geography, Arithmetic, Spelling and Writing. She is quite a ready talker and has considerable facility in lip-reading, but she can improve her pronunciation and learn to read the lips more quickly.

"To JOSEPHINE REISE, a bound copy of *Wide Awake* for general improvement in speech, language, Spelling, Writing, etc. We want Josephine to realize how well she *can* do; to be less timid; gaining confidence to use her speech more," and so on.

One more point; Emma Garrett did not confine her work to the deaf children directly under her care, but she labored for the mass of the deaf. For the benefit of the whole class of the deaf she desired to show the actual work in operation at the World's Fair in Chicago. She was well enough before her last illness there, to realize the widespread impetus which this showing gave to the work and this fact gave her infinite pleasure.

A young woman came to our rooms there one day and said: "Miss Garrett, I am so glad you are doing this work in just this way; my sister, now twenty-one years old, became deaf at the age of 10 months, from spinal meningitis, and my mother made up her mind she *should* talk and she accomplished it so well on just these lines, that my sister was educated with the hearing, graduated with honor at the High School in Chicago and is now studying in the Art School here." She added that her sister was a bright society girl and prided herself on people failing to discover her deafness unless they were told of it.

I am endeavoring to carry on my sister's work as strictly as possible in accordance with her methods, in which I am ably seconded by my first assistant, Miss Anna C. Reinhardt, whom I trained for the work some years ago, and who has had the advantage of having been in the Home since the date of its opening and thus acquiring a thorough knowledge of them.

AURICULAR INSTRUCTION IN THE NEBRASKA SCHOOL

BY

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AURICULAR INSTRUCTION IN THE NEBRASKA SCHOOL.

Auricular development is ear development. It is as old as man himself. We have no reason to suppose that at man's creation the Divine Parent endowed him with speech and language, or with ears already attuned to the "mother tongue." The "mother tongue" was yet to be born. It was to be the outgrowth of man's soul seeking to give expression to the thought-fire burning within. As a thought moved his mind or a passion swayed his soul, it sought expression through pantomimic signs and gestures, to which he tried to give added emphasis by vocal utterance. His ears were yet to be attuned to that "mother tongue," by its constant repetition, to each other, as the same vocal sound would naturally be used to give expression to the same thought as it recurred to his mind. Gradually this sound came to stand for the thought and its pantomimic expression was no longer needed.

A like process takes place in the experience of every normal child. At first the multitude of sounds that greet its ear mean nothing to it. Articulate speech means no more than the clashing of cymbals. But as time passes, and these sounds continue to strike upon its ear, it associates certain sounds with certain persons. It soon knows mamma's or papa's voice from all other sounds.

Then it begins to associate certain sounds or names with certain objects. In time, it learns that the name "mamma" belongs to one object or person, the name "papa" to another, "baby" to itself. Thus the process of differentiation goes on until the little one learns the common objects of his household life. This is the natural process of auricular development; Nature has been at work in her own way, and by the constant repetition of the same sound has fixed in the child mind that sound as the representative of a certain object or action. So far, the teacher, as teacher, has no place or purpose in the development of the hearing of the normal child. Yet, every word that has bene

spoken, every sound wave that has struck upon his ear, has helped educate his ear.

At this point auricular instruction may begin. The teacher may come in to give the direction which he desires the auricular development to take. This development can be carried just about as far as we are desirous of doing. There is almost no limit to the educational possibilities of the average human ear. We can take the child with "no ear for music," and by confining her in an atmosphere of music, by continually presenting the sweetest melodies to her ear, so develop the idea of musical harmony that the slightest discord is torture. The ear can become so sensitive as to detect a discord even among hundreds of instruments or voices.

One day last summer while in Chicago, I was in the great Illinois building. Hundreds of people were in the same building, some as sightseers, and others rushing about with an air of business. Coming toward me was a blind girl. As she got near, her merry voice rang out with the cheerful greeting, "How do you do, doctor?" and her greeting was returned by an elderly gentleman just in front of me. No word had been spoken to tell her that he was anywhere near, and the girl was totally blind. Yet by her educated ear she had been able to distinguish the sound of his footsteps from that of the great crowd around, while to the rest of us, the footfalls sounded so nearly alike as to be undistinguishable.

I am told that nearly all the blind are thus able to distinguish those with whom they associate. Is it because the divine creator has given to them a more delicate ear to compensate for the loss of sight? I think not. The same power is possessed by those who had normal sight and lost it, though undoubtedly in a less degree, depending upon the age at which the loss occurs. In a very limited sense, it is possessed by all of us. It is rather, because having to depend more upon their ears, they have paid closer attention to the sounds that fall upon them, and have differentiated more closely than we who do not need to depend so much upon our hearing. Thus sounds that to us appear alike for want of this aural development to which they have of necessity been subject, to them are widely distinguishable one from the other, and each tells a story of its own and they are no more confounded than the different notes of the octave, or the different tones of the human voice, or any other

familiar sounds are by us. Their necessity has compelled them to distinguish more closely, to give attention to the difference in sounds we regard as similar, and by this process, a sensitiveness to these sounds has been developed in their ears to which ours are strangers.

Even the untutored savages by putting their ears to the ground are said to be able to tell the comparative size, distance, and position of an enemy marching against them because their necessities have forced them to train their ears to this class of sounds.

The process of oral development, then, is nothing new. Aural instruction itself is nothing new. These are coeval with man's development and civilization. But the application of this principle and this method to the weakened ear is comparatively new. It dates from the Nebraska Institute and the work of its present Superintendent. He saw that the process of nature with he normal child was the process to be followed with the child with even less than the average amount of hearing. Others had seen the same thing before. About the same time the first class was started in the Nebraska Institute, Dr. Von Troeltsch, of Germany, suggested the advisability of teaching those not totally deaf through the hearing. But Mr. Gillespie was the first to make a practical demonstration of it; to put his faith into acts. Until he started his class, no systematic, intelligent attempt had been made to demonstrate the feasibility of training the hearing of the child whose ear is not sufficiently acute to gain language and knowledge from the ordinary conversation of his fellows. He saw that as the sounds of nature did not pierce the pupil's ear with sufficient force to enable him to differentiate and distinguish them, and these sounds, even if heard at all, sounded to him so nearly alike as to be undistinguishable, they must be furnished by special drill to his ear, and repeated again and again until there arises an ability to distinguish, to associate this sound with this object, and that sound with that. The teacher steps in to assist nature. If the ear of the normal child is made more acute by being furnished with sound, if by having the same sound dinged into his ears again and again, there arises an ability to distinguish sounds before regarded as similar, why may not the same process, adapted to his condition, increase the ability of the weakened ear to recognize sound? Nature is one. There is not one law for the normal

ear and another for the weakened one. Nature's laws are continuous. The development of the weakened ear will not be so rapid. The greater any power is at the beginning, the faster its development may be attained. The same effort on the teacher's part will cause a more rapid development of the bright mind than of the dull one, but the dull one develops along the same lines and according to the same principles as the bright one. The means must be especially adapted to the condition of the dull mind. The methods by which a bright child would make fair progress, may not enable the dull one to make any progress at all. The specific method must be adapted to the condition of the child mind. The same holds good for the ear. The normal ear is developed without conscious effort, and at such an age that we scarcely perceive the process. But it develops by being furnished with that upon which it feeds—sounds. Likewise the weakened ear is developed by being furnished with its element—sound.

The training of the ear began in the Nebraska Institute about the year 1880. The Superintendent selected a class of older pupils which he trained in person, using the audiphone and ordinary ear tube. At the close of the school year, after only a few months of drill, the class had made such progress that an entertainment was given with them in the city. The next year a class of smaller pupils was organized and trained in the same way. Up to this time it had not been made a part of the regular school work. But the work of this class was even more satisfactory than that of the preceding one. So in the fall a regular class was formed and offered to the then articulation teacher who declined it on the ground that she had very little faith in the results. Then the class was given to the present principal of the Chicago Voice and Hearing School, under whom they made such progress that in the fall of 1883 she left, to open the above named school on her own account, and Mrs. Taylor took charge of the class in the Nebraska school. Two years later the writer entered upon his work in the same school. At present three other teachers are employed in this department which includes the Oral as well the Aural pupils. One of these teachers is a semi-mute lady who teaches the pupils to write what they have learned to speak.

In all these years about 80 pupils have received aural instruction for one or more years. In this classification I have not included those semi-deaf who lost hearing after gaining speech

and still retain a part of their former normal hearing. Forty-six of these pupils were present in school last year. Several of those not present were in school for only one or two terms. Only one is a graduate. One has passed on into that realm where no deafness exists. Three left us to enter schools for the hearing. Eight have entered other schools for the deaf after one or more terms with us.

One has married a speaking and hearing man. At least ten of them are able to use speech and depend upon their hearing in business and the home. The whereabouts and condition of six are unknown to the writer, and two or three who had only one or two terms of hearing drill depend more upon writing than upon their hearing for communication with a hearing world.

One of the ten, who depend upon their hearing, you would never suspect from his speech, to have received all or a part of his education in schools for the deaf, and would be only able to suspect it from his range of hearing and from the occasional limp in his language we call deaf-mutisms.

One of the ten is a painter by trade, and tells me that he never signs or writes. Even in these hard times he has no lack of work, and tells me that he gets along with his employers entirely by speech and hearing, and that, although he started with a very small amount of hearing, and lacks a good deal of having finished our school course. Yet he has hearing enough and mental development enough to imbibe the patriotic spirit of the times. He comes of a family of office-holders. Two uncles have held office for several years in our city or county. Another held a state position for a time. His father held office under the Harrison administration. All of them held office as Republicans, but on the advent of the present national administration into power, he immediately sent an application, backed by some of the leading Democrats of the State, for a position in the agricultural department under the Sage of Arbor Lodge. When asked if he was a Democrat, he replied "Yes," and when asked how it happened that he was a Democrat when all his family were Republicans, he replied, "To get a job," a lofty idea of patriotism that has been ascribed to other members of his family, and seems to have gotten as far as the national capital and by no means to be confined to one political party. The crop of "statesmen out of a job," seems to be a large one.

This aural instruction should begin very early in the child's life. The ear of the little hearing infant is furnished with the specific irritation that is to arouse it into life and usefulness at the earliest moment that sound waves can reach and strike upon the drum membrane of the ear. So that almost from the very moment of birth, the various parts of the ear are being trained to their various offices in the perception of sound. This, of course, we cannot do with the child who has less than the average amount of hearing, but the nearer we can approach it, the greater will be the final results in the individual case; the greater will be the child's ultimate advantage from his hearing. The teacher will not be able to show as great results with the small child as with the large one from a single year of work. But every year the work of aural instruction is delayed, lessens the capabilities to be derived by the child therefrom. This needs no proof. Use develops an organ. Disuse brings atrophy, decay, and death. The weakened ear gets, during the early years of child life, but an occasional sound impression, and that under the most favorable circumstances. So there is given to the child no opportunity for that gradual learning of the sense of these sounds that is given to the child with full hearing power. The child soon ceases to take an interest in even those sounds it does hear, and finally, from this want of attention, the sound waves cease making any impression upon the ear, nerves, and acoustic centers. As a result of this process, there is a slow retrogressive metamorphosis of these parts themselves. They fail to get the specific irritation produced by sound, and so fail to be aroused to action. Gradually they lose the power of acting at all, for this want of sounds on which they should have fed. This deterioration may extend, from similar causes, to the whole mind. It may extend so far that but little can be done in the way of education. The mind may be so long without thought, without such environments as shall make thought possible, that but little thought is possible. Such a pupil may learn for a time, and then growth almost stops because the limit of the mind capacity has been about reached. In our school is an Irish boy whom we will call Pat. He was grown almost to man's estate when he entered school. His early home was a grader's camp. His educational surroundings—a span of mules and a black snake. He had what we called pretty good hearing. The first year he did fairly well, although he seemed somewhat deficient in

memory. Yet he learned to hear and speak well quite a number of words, chiefly names of objects of his home life. At the close of the second year he was about where the first year left him and he is there yet, and although the past year he was transferred to the sign department, his progress has been almost nothing. He has a well-shaped head, and there is no doubt, that had he entered school eight or ten years before, he would have made fair progress.

The purpose of aural instruction is to check this deterioration of the parts of the ear, and by furnishing them with their elements,—sound,—cause them to develop while they as wel as the brain are at the formative period. And the earlier we begin, the better, because they have lost less by deterioration and are in a more plastic condition, more of development is possible. Then it is easier to form habits of attention at this time than after habits of inattention to sound have become fixed by the lack of sufficient sound reaching their ears for them to learn any sense therefrom.

The first step in the ear development is to get the child to distinguish sounds widely distinct. If the child has pretty good hearing, one can begin with the open vowel sounds, but very often one must begin with something making sharp sounds, as bells, whistles, etc. First sound them so that the child can see them, taking only two at first, and then sound them again when he cannot see them, and if after several trials, he becomes able to tell accurately which you have sounded, he is a proper subject for aural work. But during the first years of his course, under no circumstances should a word be taught by ear until it has first been taught by sight. The knowledge of a thing must come before its reproduction. The Shibboleth of our profession has been, "Ideas before language," and the same law holds good in aural work. The child must know what a thing is before it can understand or reproduce it. Our little hearing children know the names of things long before they are able to speak them, but after they have begun to talk, they often startle us by repeating words they have heard, of whose meaning they have no conception. They have heard the sound. They are accustomed to reproduce in speech what they hear. It is a part of the process by which they have learned, but mere reproduction of speech or sound, while it may be valuable sometimes as vocal gymnastics, is not knowledge.

In our Institution the hearing pupils and lip-readers are taught together and special hearing drill is given to the hearing pupils. An act is performed, and the children are taught to tell in speech what has been done. Then the same act is performed again, and the pupils are taught to write it. Then the act is again performed and they are taught to hear or lip-read it. In this way the speech, hearing, and writing are associated, and they learn that they all mean the same thing. The hearing is taught either with or without a trumpet. We get along without a trumpet just as soon as possible. We have used the audiphone, but it is useful only in isolated cases. We have tried several of the so-called invisible ear drums and phones, but they seem worthless. The most efficient aid we have found is the ordinary flexible ear tube. In most cases we prefer one that has an ear piece large enough to cover the whole of the external ear. This part of the ear was intended to collect the sound waves and prepare them to strike upon the drum and its action is essential to the highest results. Besides we do not think that such a tube is so apt to injure a sensitive ear as one that forces the sound waves through a small opening immediately upon the drum.

At first only those with apparently the best hearing were trained at all. But often those from whom we expected the least, did the best. Now all new pupils are put in this department and all, who have any hearing, have that little trained, and the rest are taught as lip-readers. Of the forty-six hearers present last year, three were in the seventh grade, five in the fifth, seven in the fourth, and the rest in the three lower grades. In the two upper grades, six out of the eight, are congenital, and six of them will need no help from writing to get along in a hearing world, after they have finished their course with us, while only one has gained very little. In the fourth grade, five out of the seven are congenital. The greatest age at which hearing was lost in any of these grades is three years. The lower grades give promise of making much better hearers than the more advanced ones. So far, the third grade has done better hearing work than any other class we have ever had at this stage in their education, so that we feel that as we learn better how to work, the results will be correspondingly better.

A good deal has been said about developing speech and hearing at the expense of ideas and language. That the speech taught pupil is a mere parrot, who goes through with a lot of

mechanical evolutions called speech, but with no ideas to give expression to, and with a very inferior mental development. And a good many good people in our profession really believe it is true. An experienced teacher of the deaf visited us not long ago. She was invited to see a hearing class. She remarked, "I do not care anything about the hearing. I don't believe in it. All the work put upon the hearing is so much taken away from the language," and more to the same effect. She was promptly taken into one of the hearing classes and shown, not so much their hearing as their written language. And as she went out, she said, "Now I have got my eyes open. Their language is as good as that of the same grade anywhere." We think it is true. And as the hearing improves, the hearing people about talk more and more to them out of school, so that they begin to learn language just as hearing children learn it; from hearing people speak it. Then the cultivation of the hearing, even if it never did anything else, does more than all other things combined can do, to break up mechanical speech and make the speech of the child natural. If it never did anything else we think it would almost pay for that alone.

THE WORD METHOD

BY

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THE WORD METHOD.

Many of you who are here to-day saw the work of the little deaf children at Chicago last summer. I was very much interested in it. It was said by members of our party that it was dangerous for me to go to the Children's Building early in the morning, for I saw little else on the Fair grounds that day. I was interested in the work. There were many questions which I wanted to answer for myself. Why were the children such remarkable lip-readers? Why did they speak so easily and why was their vocabulary so large? These and many other questions forced themselves upon me.

I thought of two of our own girls who, coming to school when very small, were put into the same room with an advanced class. The two little ones had their special work between the lessons of the older class. Their teacher tried the word method with them. Their progress was unusually rapid and they have now left us for hearing schools. One is attending the High School in her own town, the other, a private school in Cambridge, and both are doing good work with pupils of their own age. Was one reason of their success, the method by which they were taught?

To return to the children at the World's Fair; I watched their work; every word was taught as a whole; no element drill was given, it never had been given. The following questions then came to me. Is the word method the best method? Would the same progress have been made with the same little children, for they were very little, had the element method been used? I thought and thought. Which is the simpler way? In which are we following most closely the ways of Nature? Moriz Hill says, as quoted by Mr. Green: "Develop speech in the deaf child in the same manner in which nature produces it in the hearing child." A little hearing child hears word after word, day in and day out, and at last begins to reproduce these words. Why should not a deaf child see word after word upon the lips

of his friends until he himself learns to repeat them? He should, and will if care and help are given him. As it is natural for a hearing child to hear words and use them first singly and then in sentences, so it is natural for a deaf child to take words from the lips and use them first as single words and phrases and then in sentences. Later, a hearing child analyzes his words; so should a deaf child later, pick the words to pieces, find the elements of which they are composed and put them together for new words. As a hearing child in school has element drill, voice drill, etc., so a deaf child should have the same.

In considering this subject the thought has come to me of the manual training, in which I have been taking a normal course, the Swedish Sloyd. One of the principles of that system is that the child's work shall invariably result in a useful model. He shall not work day after day on exercises that when completed produce a good joint, or a fine curve, which would correspond to a perfect element in our work; but it shall be a whole, a completed thing, an article of use. Why may we not have it so in the very first articulation work of little deaf children? Let the result be a useful model, the expression of an idea, a word that can be put to use at once; and as a boy hurries home with the shelf that he has completed, to put it on the wall for his books or his toys, so our little ones will go home and delightedly say, "papa," "mamma," "water," etc., to some purpose.

A year ago, I worked with my children until January upon the elements. They were very good, they watched me, they did as they were told, but of what interest, of what apparent use, was it to them. And after they had completed the element work, the words had to be taught as wholes. the drill on each word must be given. This year it was decided that we should try the word method and so I gave my first lesson in articulation in the following way:—

We all seated ourselves on the large rug in our sunny schoolroom. I took a ball. Holding the object up, I gave the name myself and required the first child to imitate me. The attempt being made, even if poorly, the child had the pleasure of catching the ball and throwing it back to me. Before the game was over, each child was anxious to say the word and to join in the game. As a baby may not pronounce its first words with absolute correctness, so some of my little ones did not follow

perfectly, but a number of repetitions produced at last the correct word, and until the spring when a new child came to us, I think I never saw a gesture for ball, but we have always heard the word from the children's lips. Why was it better that the child should say "ball" at once rather than first perfect the single sounds b-â-l? He had an article of use. He could say ball every time he saw one. When he saw his brother's or his sister's ball he knew what it was and would naturally speak its name. What pride he had in saying "ball" to papa and mamma, and what delight it was to father and mother to hear the word! So at the very first articulation lesson the child gained some knowledge of the purpose of the mysterious movements of the lips, which for a long time he had probably seen but not appreciated.

So we went on from word to word. I had a doll in which the children took great delight. They learned to say ear, eye, mouth, nose, etc. One day we had, on the rug, the globe in which our gold fish was swimming. The children were watching it with great interest. At last one saw the small bead-like eyes and I gave the word. His delight was very pretty when he discovered that the little black bead was for the fish to see with, and that the word was the same that he had been saying over and over for the doll's and his own eye. The question was given them, "May I have some water?" very quickly it was picked up and the children ask for water and other articles at the lunch table with great ease.

I remember a story of two little hearing children, brother and sister, with scarcely two years between their ages. The boy took great delight in teaching his sister, when she was nothing but a baby, the names of all the objects about, having her repeat them over and over again. At last his ambitions rose. He wished to give her a long word. After she had gone through with the usual list, he followed with, "Now say sewing-machine!" What a mouthful for the baby lips! At first it seemed too much for her, but children are persistent, more so sometimes than we older people. The boy repeated it again and again and at last the little one's lips gave the word. So we may give word after word and the children delight in saying them and in finding that they are understood. One of the mothers said to me when she came for her little boy at two o'clock. "I think George is doing very well. He wants to

know the name of everything at home." That has been the delight to the children. The discovery was soon made that everything had a spoken name and it has been a pleasure to them to gain the power of saying as many as possible.

A little foreigner came to us a week or two after the family landed from one of our great ocean steamers. She had been made to understand that she should be taught to speak and she was pleased beyond measure. She did not come to us until the middle of December, yet she has passed many in the class. Her persistency is surprising. She will pick up a printed book, find some word she does not know, write it on the blackboard or bring the book to me and beg for the oral word and meaning. I could easily spend my whole five hours teaching her with pleasure to us both, but there are thirteen to be taught and little Celia must take a thirteenth part. Her pleasure is great in carrying home the book containing her vocabulary and she shows how she reads the words at home to "papa." "Papa" could not speak English when Celia first came to school, perhaps together they may learn the English language. One little fellow of five amused the family one day, by turning to his grandfather and saying, "Grandpa, run," and persistently says, "Fold your hands, fold your hands," to those at the table at home until it is time to begin the meal. My little four-year-old says, "arm, thumb, ball, mat," and claps his hands delightedly at his success in saying them. I might multiply my stories, but these serve to show the pleasure of the children in their use of speech both at home and at school.

That it might be recorded that, in using the word method, nothing was lost in the child's ability to give an element if desired, Miss Fuller has taken the children singly from time to time and tested their elements. Those that were given perfectly were recorded and the number of deficient elements is very small compared with that of last year. They are in most cases *sh*, *ch*, *zh*, and *x*, elements which are often wanting in the speech of young hearing children.

Do I believe in the Word Method? From my theoretical and practical knowledge both, I say "Yes." I find from my work, that the results of this year, by the Word Method, greatly exceed those of the previous year by the element method, and I trust that this year's experience will increase in still greater degree the results of 1895.

THE ELEMENT METHOD

BY

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THE ELEMENT METHOD.

The past quarter of a century has witnessed many changes in the educational methods of this country. The old systems that produced the great men of our history have given way to the "New Education." Whether its results will be as good or better than those of the "Old" remains to be seen.

While the education of the hearing has been following out the principles of Frœbel, Pestalozzi and Herbart, the education of the deaf has been following Heinicke, Hill, and Vatter. The "New Education" for the deaf as well as that for the hearing came from Germany. True, oral instruction was given in other countries before it was even heard of in Germany, yet it was from Germany that it spread and so is commonly known as the German method. As the best German instruction begins with the elements, the element method of teaching speech is also called the German method.

Many have claimed that hearing children learn words and even sentences first and that we should follow this "natural" order in teaching the deaf. Is it so? Does the hearing child speak words and sentences first? Watch a healthy child through the first two years of its life and see. Careful observation will show that there is practice in the elements before speech is acquired. The first utterances that we call speech are of course words, for we do not call isolated sounds and meaningless combinations by that name, but there is probably no element or combination that is not employed by a healthy infant before the tenth month.

Between the sixth and tenth months the child exercises its lip and throat muscles in tasting, swallowing, laughing, smiling, cooing, etc. All of these are preparing the way for articulation and are the signs of coming speech.

The first sound is a humming "*m-m-m*" with a motion of the lower jaw and lips. The baby's vowels, at first, are usually only strong aspiration through the positions for some of the

sounds of *a* and *o*. The first consonant sounds are *m*, *p*, *t*, *n*, *d*, while *f*, *s*, *k*, and *r* are the last. The earliest combinations are *ă-ph*, *ă-bh*, *ă-gh*, *grrr*, *ă-goo*, *brrr*, *ă-dʒh*, etc.

Mother and child carry on extended conversations — unintelligible to any but themselves — in combinations like these, "*brrr-brrr*," "*grrr-grrr*." By degrees these are transformed into "*baby*," "*bell*," "*ball*," and "*girl*," "*go*," etc.

Surely it is the element and not the word or sentence method that is the "natural" method.

The word method, which was introduced for teaching reading and language, not speech, does not seem to be as popular as it was in schools for the hearing if we can infer anything from the growing instruction in phonics (elements).

Many advocates of the word method seem to confound the teaching of speech with the teaching of language and imagine that what will teach language to the hearing will also teach speech to the deaf. Deaf children are not normal children and, whatever may be done later, they cannot at first be taught like normal children.

The child that is born deaf may, and often does, show all the signs of coming speech and many times the parents do not notice anything wrong until the child is two years old or over. But during all this time no impressions of sound are being made on his mind and he never imitates what he never hears, and at the time the normal child is gladdening his parents' hearts with childish prattle the little deaf child has no speech and only a few inarticulate cries of joy and pain. For three or four years they go on, the hearing child acquiring speech and language, and the deaf child nothing but vague ideas of the things about him which he can only express in his own crude signs. Can these two children enter school and both be taught by the same method? Can he, whose organs of speech have never been used for speech, be made to pronounce immediately the names of things, or sentences about them, which the hearing child has spoken for years? Before this can be done the lost practice of years must be in a degree made up, it never can be fully, and it is in this if in nothing else that the element method is superior to the word and sentence methods. Going back to those simple movements of lip, throat, etc., which in his cradle the deaf child had in common with his hearing brother, but long since discontinued because they led to nothing, the element method

builds upon them a system of gymnastics of the vocal organs which is designed to give flexibility to the organs of speech. These gymnastics consist of

(*a.*) Opening and shutting the mouth and putting the lips in position for vowels and consonants (using neither breath nor voice).

(*b.*) Moving the tongue in and out; applying the point to various parts of the lips, teeth, and roof of the mouth; taking the positions for point, front and back consonants; flapping, widening and narrowing, in short, any movements that will give control of the "unruly member." The teacher should always see that whatever is undertaken is accomplished, for in that way a victory is won that makes the thing attempted next easier.

(*c.*) Simple breathing exercises, using both the mouth and nose.

(*d.*) Movements of the larynx up and down (as produced by high front and low back vowels).

All of these positions and motions are first practiced without breath or voice simply as exercises in imitation and sight training. They attract the child's attention to the things upon which his education in speech and lip-reading depend. Later, breath and voice are added to the positions and elementary sounds result.

To impress upon the child that speech and lip-reading are the important things and to form the habit of thinking in spoken language, all elements and words are first taught orally, the child speaking them and reading them from the lips for several days until they become perfectly familiar, then the written form is given. In the case of meaningless combinations given simply for articulation drill they may be read from the written form directly.

Thus in the element method speech, lip-reading, reading and writing go on simultaneously. Writing is not deferred as is sometimes done under the word method until the second or third year or practiced as a merely mechanical operation.

While the deaf child on entering school lacks speech he yet has considerable mental and bodily development which the infant in the cradle lacks. He already has many ideas about persons and things and, although unable to express those that he has in language, is capable of receiving many more.

Mothers and nurses "gabble" words and sentences to infants before they can be expected to give words and sentences in return. Why should not teachers of the deaf talk to their pupils in a similar way? Only those who have tried it have any conception of the amount of language that can be given through lip-reading alone in the form of commands, directions, simple questions that can be answered by the natural affirmative and negative signs of nodding and shaking the head, etc. And all the while the child is learning where to look for communications from others; he is forming the lip-reading habit which will soon be followed by the speech habit, and his mind is being developed at the same time that he is acquiring the elements of speech.

In teaching the elements of speech the element method does not follow nature, science pushes nature to one side and arranges the sounds to be taught in three series of increasing difficulty. First, comes pure breath through open and then obstructed channels. The positions already taught as gymnastics now become breath consonants by the addition of breath, for consonants, notwithstanding their name, can be uttered as perfectly alone as in combination with vowels.

Second, voice is added to the same positions and voiced consonants result. Third, voice is emitted through openings of different shapes but having no obstructions, thus producing vowel sounds.

The second and third classes are usually taught alternately.

In the order of teaching, care is taken that two sounds that in any way resemble each other are not made to follow one another for fear of causing confusion. Sounds of simple mechanism are taught first and the more difficult ones later.

Following elements come simple combinations and after these, words, just as the "*brrr*" of the hearing child becomes "baby" or "ball," and "*grrr*" becomes "girl."

Work in combinations begins just as soon as three or four elements are taught, at first by combining breath consonants as *fp*, *thp*, *sp*, and as soon as vowels are taught, by combining them with all the consonants previously taught in as many ways as possible.

Words are taught at first as combinations and when they can be read from the lips and spoken, meanings are assigned to them.

It cannot be said that the element method keeps the child from learning and using language, for all the work detailed above can be gone over in three months. With the element method any system—natural or scientific—of teaching language may be associated.

Pronunciation at sight is one of the advantages of the element method. Until taught the powers of the letters (elements) pupils taught by the word and sentence methods can do nothing with words the pronunciation of which they have never been taught. Why not teach first what must be taught sooner or later? Even when taught words first the child cannot speak the whole word until he can speak its first, last and middle sounds. If there is any difficulty with any of these sounds it must virtually be taught as an element by the teacher's prolonging its position and attracting the child's attention to it especially; sometimes, even, it is developed as it would be under the element method.

Like Milton's daughters who read dead languages to their father while not understanding a word of what they read themselves, the pupils of the element method can read, in a few months' time, anything that is put before them so as to convey meaning to the ears of a hearing person, while the pupils of the word and sentence methods cannot read even the simplest sentence unless previously taught it as a whole or every word contained in it. It is true that the pupil of the word method understands, if he has been well taught, everything that he reads while the pupil of the element method may understand nothing; but the question now is "How shall speech be taught,?" and has nothing to do with language, that will of course be taught by itself. Let language be taught in whatever way you please, the element method of teaching speech will give the pupil the ability to speak all the language he learns and will help him to get more from reading.

To pupils who have received some instruction by manual methods the element method is particularly well fitted to give speech in a very short time. After being taught the elements and some of the more difficult combination they are able to speak readily anything that they can write. But of course lip-reading is more difficult for such pupils than for those taught at first by the oral method.

The preparation of the teacher of the element method should include a thorough knowledge of the organs of voice and speech, and their use. She should also know the exact position assumed in the production of each sound and be able to present it to her class in the form of a diagram.

Every device, such as Bell's Visible Speech and Line Writing, Whipple's Natural Alphabet, etc., by which positions can be expressed and their resemblances and differences studied, is of the greatest value to the teacher.

Diacritical marks which should of course be taught to older children when they begin to consult dictionaries are of no use to beginners, since nothing that they will be given to read will be so marked. As a substitute for diacritical marks, with young children, nothing is better than the system of vowels with dashes, representating consonants, introduced to the profession just ten years ago at the Convention of Articulation Teachers in New York City, by Miss Alice Worcester of Northampton. By this system each vowel sound is made self-pronouncing by its position in the word.

Such in brief is the element method and some of the reasons in favor of its adoption by the teachers of the deaf. To those who wish to know more about it, I recommend a visit to the Clarke School. If such a visit is impossible a fair idea of the details of the work can be obtained from the articles by teachers in that school and reports of work done by them in the School of Practice published in the First and Second Reports of the Summer Meetings of this Association. Some valuable articles have also appeared in *The Educator*, especially the current series by Miss Yale on "The Formation and Development of Elementary Sounds."

The acquirement of speech by the normal child is very fully treated in Preyer's "The Mind of the Child," Part II., "Development of the Intellect," Chapter XVIII, Pages 99-188.

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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

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ABNORMALITIES OF THE UPPER RESPIRATORY TRACT AND EAR, FOUND COMMONLY AMONG DEAF-MUTES

BY

ARTHUR AMES BLISS, A. M., M. D.

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ABNORMALITIES OF THE UPPER RESPIRATORY TRACT AND EAR FOUND COMMONLY AMONG DEAF-MUTES.

LECTURE I.

At the annual meetings of this Association, one of which was held in the summer of 1891, and again in 1892, you have had the privilege of hearing lectures by Dr. Hewson and Dr. Harrison Allen which have described most thoroughly the anatomy of the organs of speech and hearing, as well as the physiology of these parts. There has been brought to your attention, also, some of the abnormal conditions found in the organs of speech. So fully and ably have the anatomy and physiology of the respiratory tract and of the ear been presented for your consideration, that it would be quite unnecessary for me to review these subjects, although I feel far from certain, that many of my hearers can recall but a small part of what Dr. Hewson so clearly laid before you. Doubtless, however, enough remains in your memories, to which your own study and investigation have added greatly, to enable us to avoid these important, yet time-consuming subjects.

It is most important that these medical addresses should, however, bear certain relations to one another, and thus form parts of a continuous course. For this reason, I have chosen to attempt a presentation of certain abnormalities of the Upper Respiratory Tract, which are found very frequently among deaf-mutes, and it is my hope, that, imperfectly as I fear this subject will be handled by me, there may still be brought to your attention some facts which may be of service to you in your noble work as teachers of the oral system. Before taking up my subject in detail, I feel that, for a proper understanding of terms and of conditions of disease more or less new to many who will hear them, it is proper to clear the way by a very general reference to certain anatomical points.

Anatomical Notes on the Larynx and Lungs.

In few words then, I would recall to your attention the fact, that the membranous bands within the larynx—called vocal cords—form the instrument which produces the human voice. We say "*cords*," and I fancy that we are apt to think of these bands as very mechanical contrivances—violin strings or pipe-reeds—and to forget that they are living tissue, controlled by a fine adjustment of muscle, nerve, and blood-supply, and having, in their own substance, muscular fibres which vary their tension and change the pitch of tone. The air which sets these self-adjusting vocal bands in vibration passes through the lower part of the larynx, the trachea, and the entire length of those many tubes of varying size which constitute the bronchial system. The source of power is embodied in the chest and lungs, which are forcibly diminished in size by the expiratory muscles. Again we are apt to resort to comparisons, and to think of these complex structures as organ-bellows, drawing in air and pumping it out. But we are dealing with living, growing tissues, changing in their molecular elements every moment, changing in their gross structure as a result of every influence that tends to force them to perform their functions under abnormal conditions. It must be borne in mind, that the inflation of the chest is an effort made against a heavy weight of atmosphere; that, if this expansion is imperfect, and continues so during any prolonged period, the lungs, beneath, so change in structure, as to lose portions of their air-containing vesicles, like a sponge cramped into a space too small for its full expansion. This is especially liable to occur during childhood, while the walls of the chest are still undeveloped. The cause is, mainly, imperfect inspiration through the abnormally contracted passages of the nose and pharynx.

Resonating Cavities.

Above the vocal bands, lie cavities which constitute "resonators." These consist of the upper part of the larynx, the entire pharynx, and the cavities of the nose and mouth, arranged, as Landois remarks, in stories, as it were, the one over the other, each capable of being closed alternately. Again, we are not dealing with a sounding-box of wood, bone, or metal, but of living tissue, changing in shape with the development of the growing child, and subject to alterations by disease or abnormal use.

Size of the Nasal Chambers.

Briefly referring to the size of these resonating chambers, I would remind you how much of the skull they involve, a matter we are apt to forget in thinking only of the external nose.

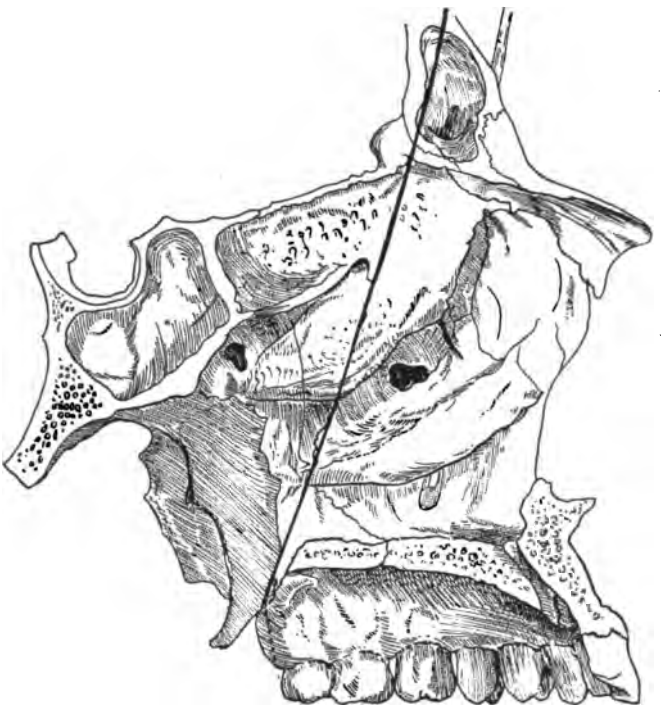

Fig. 1.

ROOF, FLOOR, AND OUTER WALL OF NASAL FOSSA.

The dark line indicates plane of triangle bisecting the nasal chambers. The dotted line indicates base line of this triangle.

The nasal chambers include spaces within the skull, whose anterior walls form about one-third of the face, exclusive of the lower jaw. These spaces might be included within the lines of a triangle whose much-rounded apex would cover the inner third of the superciliary ridges and inter-orbital space—the space just above the "root of the nose." Its lateral arms would extend downwards, inwards, and backwards, and would join the extremities of the base-line, which would itself run through the junction of the hard and soft palate, and terminate immediately behind the third molar teeth. Posterior to the base-line, extends that important annex to these chambers, the *post-nasal space.* Above and behind the plane of this triangle, lie the posterior-superior half of the nasal air-passages, the sphenoidal sinus, and

two ethmoidal sinuses. The triangle would bisect the superior maxillary sinuses — those large, air-containing cavities beneath the face, opening into the nares. Its apex would bisect, also, the frontal sinuses, between and above the eyes. Below and in front of this imaginary triangle, lies the larger part of the anterior nares. Measured on the skull, the antero-posterior depth of this area is about three, three and a half, to four inches; extending from the external openings of the nares, back to the centre of the anterior arch of the first cervical vertebra. With the exception of the inferior maxillary and malar bones, every bone of the face, together with the basilar process of the occipital bone, enters into the formation of these tortuous and extensive areas.

General Structure of the Nares; Soft Tissues.

Here, again, we are dealing with cavities not cut out from a common standard pattern, but differing, even within strictly normal limits, in each individual; and differing greatly, as a result of disease. The walls of thin bone are overlaid with mucous membrane, in whose substance lie myriads of glands, fine net-works of arteries and veins, and sensory branches of the great Fifth nerve which go in bewildering windings to unite with ganglia of the sympathetic nerve system. Such union of sensory and sympathetic nerves, leads to many series of reflex manifestations in regions of the respiratory tract, and upon the heart and blood-vessel system, often far remote from the limited area where irritation exists. We should wander far from our subject if we entered upon a description of such reflexes or upon the subject of the pathology of the upper respiratory tract, in general. This is not intended to be a medical address, yet, in presenting certain facts for your attention, I may be forced occasionally to give you suggestions of the hospital lecture hall.

Conditions causing Occlusion of Resonating Chambers.

Avoiding, then, any unnecessary attention to the normal or morbid anatomy of these parts, I would simply call your attention to some of the alterations which are found within the nares, post-nasal space, and pharynx. Later in my remarks, you will see that the conditions I am about to describe are very commonly found among the pupils who seek instruction in your schools. Let me assure you, that I shall limit myself strictly to these lesions and not bore you with others that are less commonly observed.

You have learned that the nares is divided into two chambers by a septum — bridge of the nose—extending through the

middle line of the skull for a distance of about two inches; that this structure is composed of bone and cartilage; that, in the outer walls of both nasal air-passages are found thin cushion-like, rounded masses, placed one above the other, and having a scroll-like, bony structure as their frame-work. The scroll-form has caused them to be named, *turbinated bodies.* Their soft structure consists of numerous mucous glands and blood-vessels in a bed of fibrous tissue. The blood-vessels communicate with certain enlargements similar in structure to the vessels themselves, vascular pouches or sacks, which can be filled quickly with blood, and from which, by contraction of their muscular and elastic walls, the blood can be, as quickly, driven back into the veins. Thus, by flushings and depletions of these vascular spaces, the outer walls of the nares swell and contract frequently during the day and night, coming sometimes in contact with the septum and thus partially or completely closing the air-passages.

Turbinate Bodies.

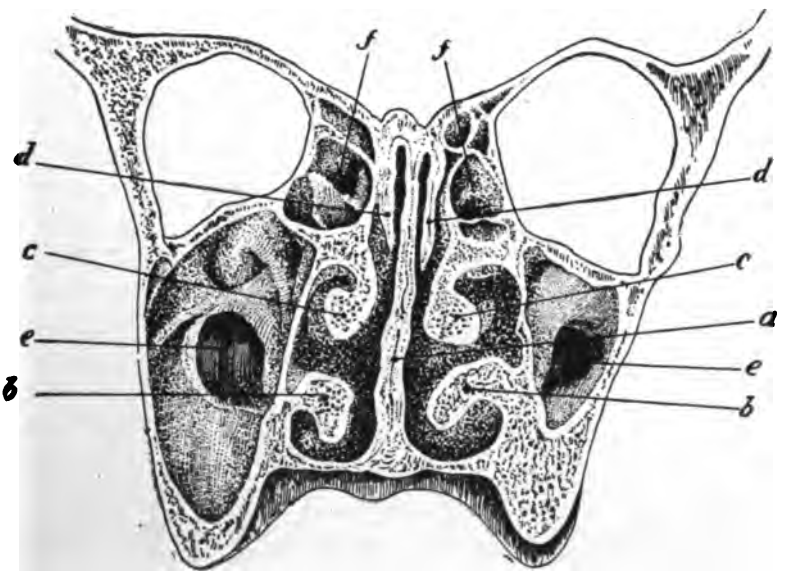

Fig. 2.

SECTION THROUGH THE NASAL CHAMBERS, SHOWING THE NASAL SEPTUM.

b, *c*, *d*, the lower, middle, and superior turbinated bodies: *a*, the nasal septum; *e*, the superior maxillary sinuses; *f*, the ethmoid sinuses. The septum is shown to be lacking in lateral support, being attached at base of skull and along floor of nose. [*From Zuckerkandl.*]

Like other parts of the respiratory passages, these turbinated bodies are covered with mucous membrane, and their glands secrete an enormous quantity of mucus which constantly moistens

the walls of the nasal chambers. As the air is inspired, it absorbs moisture from this mucous cavity, and thus goes down to the lungs charged with a certain amount of watery vapor, while, at the same time, it is heated to a temperature in keeping with the conditions necessary for that normal interchange of gases which occurs within the vesicular structure of the lungs.

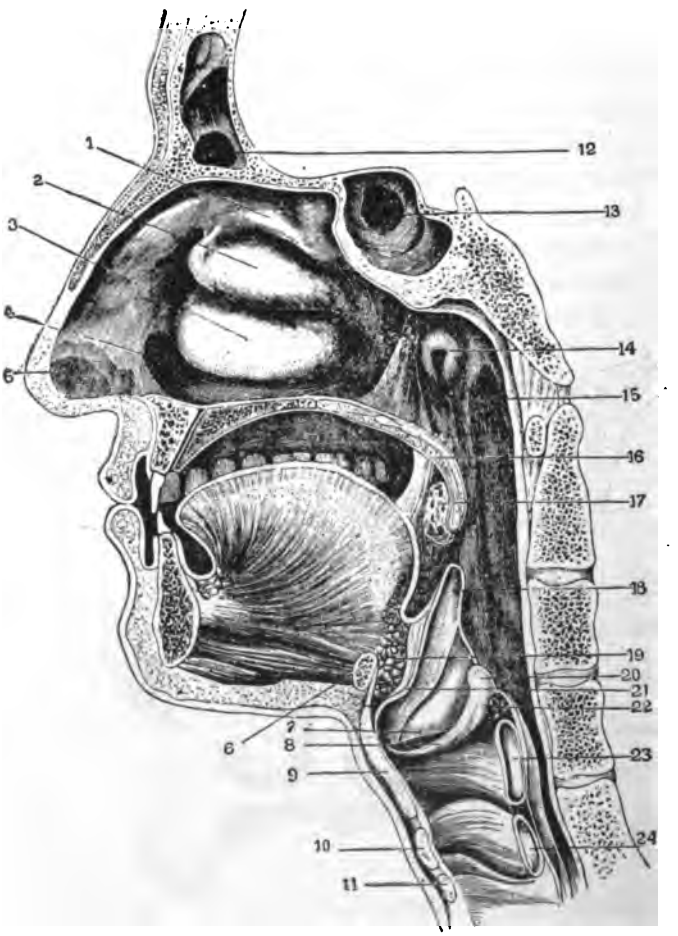

Fig. 3.

VERTICAL SECTION OF HEAD, SLIGHTLY DIAGRAMMATIC.

1. Superior turbinated bone. 2. Middle turbinated bone. 3. Lower turbinated bone. 4. Floor of nasal cavity. 5. Vestibule. 6. Section of hyoid bone. 7. Ventricular band. 8. Vocal cord. 9 and 23. Section of thyroid cartilage. 10 and 24. Section of cricoid cartilage. 11. Section of first tracheal ring. 12. Frontal sinus. 13. Sphenoidal cells. 14. Pharyngeal opening of eustachian tube. 15. Rosenmüller's groove. 16. Velum palati. 17. Tonsil. 18. Epiglottis. 19. Adipose tissue behind tongue. 20. Artyenoid cartilage. 21. Tubercle of epiglottis. 22. Section of arytenoid muscle. *[From "Diseases of the Throat," Dr. Carl Seiler.]*

Deprived of the moisture and heat, the atmospheric air becomes a source of irritation to the lungs, and aids in the development of pulmonary diseases. It is for this reason, that persistent occlusion of the nares, and, as a consequence, persistent mouth-breathing, is a grave source of danger to the health of the individual. Yet, again, must I avoid this important subject, and confine myself to occlusion of the nares as it affects voice-training.

Results of Inflammation on the Turbinated Bodies.

As a result of prolonged inflammation, the turbinated bodies become permanently enlarged. Instead of shrinking down, so as to free the air-passage of the nose, they remain swollen and in contact with the septum on one or both sides. Such individuals appear to have a constant "cold in the head." Again, as a result of inflammation, they may become permanently shrunken, their glandular structure, in large degree, destroyed, and their mucous membrane covering changed to a harsh, dry, parchment-like envelope. Great variations in degree exist between these two extremes of overgrowth (hypertrophy) and of wasting (atrophy). Yet both tend to occlude the nose, the former by a fixed and swollen mass of tissue, the later, by dried and hardened masses of secretion.

Displacement of Nasal Septum as a source of Occlusion.

Another source of occlusion to the resonating chambers of the nose is found in displacements of the nasal septum. Such displacements are exceedingly common, but their consideration becomes of importance, only, when the bend of the bridge is so extensive as to impinge against one of the lateral walls of the nares, causing partial or complete occlusion.

Description of Nasal Septum.

The septum of the nose is a thin partition wall dividing the nares into two equal parts. It is placed vertically to the floor of the nose, and extends from the tip of the nose back to the posterior border of the hard palate. It is composed of three elements, the vomer, a distinct bone, the vertical plate of the ethmoid bone, uniting with the vomer at about the central point of the latter's upper border, where the two long plates form a notch with wide acute angle, the "triangular notch." A somewhat triangular-shaped space is thus left which is filled in, so as to complete the full extent of the septum, by a large fibro-cartilaginous plate, called the "triangular cartilage." This cartilage extends beyond the plane of the face, and forms the partition-wall of the two nostrils. The relatively large, flat, thin surface of the septum, thus composed of three distinct parts, has no lateral support (see Fig. 2), *but is fixed* above, along the base of the skull,

Causes of Septal Deformity; Errors of Development.

and below, along the floor of the nose. Its development begins very early in embryonic life—about the fourth week—but the complete union of all its parts does not occur until about the twelfth year of life. During these twelve years, the skull is undergoing constant change. The rates of development at the base of the skull and about the upper jaw may not be in proportion to each other; and, thus, the bridge, still incomplete, may be subjected to varying degrees of stress and pressure from above or below, without having any lateral support. As a result, it may be sprung to one side, in accordance with the direction of this stress and the lines of least resistance. Thus, it may assume a curve whose degree may be so decided, as to produce one large open naris, while the other one is small or quite occluded.

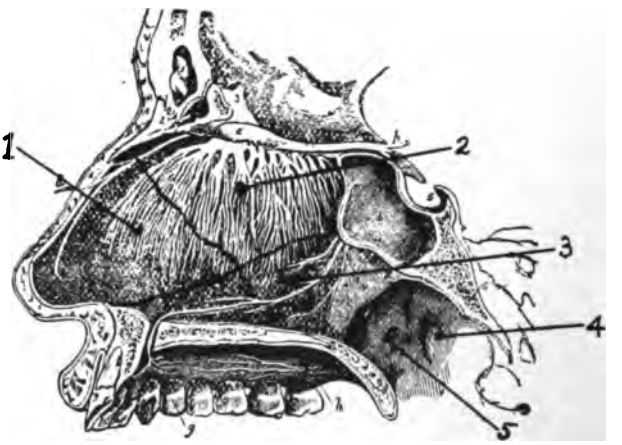

Fig. 4.

ELEMENTS OF NASAL SEPTUM.

1. Triangular cartilage. 2. Vertical plate of ethmoid bone. 3. Vomer. 4. Opening of right eustachian tube. 5. Posterior nares.

A more common cause for serious deflections of the septum, however, results from the frequent injuries inflicted upon this prominent feature during the years of childhood. Without regard to sex or social condition; whether the child is a studious, sedentary, little recluse, or a boxer, base-ball player, and destroyer of his anxious mother's peace of mind, the poor nose is bound to suffer, and to come into more or less violent contact with the hard, unsympathetic world. So, fractures of the cartilaginous portion, or partial displacements of the same from its *bony partners* in this septal compact, are not uncommon. Such

injury may cause immediate deformity, or may modify the normal growth of the parts, so that the crookedness increases with the child's growth, and occlusion of one or both sides gradually develops. We must remember, too, that this comparatively mechanical defect results in more serious conditions when associated—as it so frequently is—with that enlargement of the turbinated bodies to which I have already called your attention. Another cause of occlusion to the nasal chambers is the presence of an overgrown glandular mass in the posterior nares. This mass has much resemblance in structure to the faucial tonsils, and is technically called, an overgrowth of the normal adenoid tissue of the naso-pharynx, or, for short, an "*adenoid.*" Dr. Harrison Allen, in his lecture in 1892, went so fully and ably into the description of this overgrowth, describing its evil effects upon the physical and mental development of the child, that it will be quite unnecessary for me to dwell upon these subjects. I would simply warn you not to regard this mass as in any way a tumor, or new formation, but, simply, as an overgrowth of tissue in itself quite normal to this space; an overgrowth similar to that which the tonsils may at times assume. Like the tonsils, however, when thus enlarged beyond natural limits, it becomes a grave source of danger to the health of the child. Here, again, our field broadens out, far away from the limits of my subject, and I must keep to the narrow road we have chosen to follow. In passing, however, let me simply remind you that the lower openings of the eustachian tubes are in the lateral walls of this posterior nasal space (see Fig. 3); that these tubes must be free to allow passage of air up into the middle ear; that the common cause of the most common form of ear trouble, which has produced the deafness of your pupils, is closure of these tubes, or the ingress of inflammation through them into the middle ear. Such occlusion results most frequently from the pressure of overgrown adenoid masses, from the permanent enlargement of turbinated bodies, or from permanent contact of turbinated bodies with the nasal septum. Let me remind you, too, that the lining membranes of these eustachian tubes, of the middle ear itself, and of the nasal chambers, and the pharynx, is continuous and common in its structure, and, that catarrhal disease of these chambers readily extends along these passages into the middle ear. Inflammation of the middle ear has, in by far the majority of instances,

Post-nasal "Adenoids" as a source of Occlusion, etc.

Relation of Post-nasal "Adenoids" to Production of Aural Diseases; also of Nasal Deformities and of Catarrhal Inflammation, in relation to Aural Diseases.

been preceded by inflammation within the tracts which we have so briefly, and, I fear, imperfectly reviewed. While speaking of enlargement or overgrowth of the adenoid tissue of the naso-pharynx, I referred to the resemblance of this tissue to that forming the tonsils. I would now direct your attention to the tonsils themselves, as being another of the agents which may cause partial occlusion of the upper respiratory tract, and imperfect phonation.

The Faucial Tonsils as being Causes of Occlusion.

The normal tonsils are small, glandular structures, placed one on either side of the pharynx, between the anterior and posterior pillars of the fauces. These "pillars of the fauces," so called, you probably remember, are not columns to hold up the soft palate, as their names would imply. In reality, the pillars of the fauces are two sets of fibrous bands, one on either side of the pharynx, extending from the soft palate downwards and outwards; the forward one being attached, at its lower end, to the sides of the tongue, near the base of this member, the back one uniting with the tissues in the lateral wall of the pharynx. They are muscular structures, the forward one being named the *palato-glossal* muscle, the posterior one being called, the *palato-pharyngeal* muscle. Their situation, in relation to one another, produces a triangular space with the apex upward, at the junction of the uvula and soft palate. Within these triangular spaces, one on either side of the fauces, lie the tonsils, and, normally, the upper margins of these latter bodies should not extend above a line carried at right angles across the upper surface of the tongue, where it lies below the soft palate. They should not extend beyond the free margins of the faucial pillars, and should not, in normal conditions, be attached to these bands, both of which, during movements of the palate, should glide smoothly over them. In short, the tonsils should not press upwards against the soft palate or outwards against the sides of the tongue. Within the limits I have stated, there is much freedom allowed for variations in size quite within the normal. A healthy tonsil which is simply large, but which does not interfere with the movements of the palate or of the tongue, need not be considered. If it does produce this interference, it has, also, become large enough to cause partial occlusion of the faucial space, and interferes, also, with normal respiration and deglutition. A tonsil enlarged to this extent is rarely normal

in structure, and as a rule, readily undergoes inflammation, as shown by attacks of Quinsy, Pharyngitis, or, fortunately rarely, Diphtheria.

The tonsils have no function in phonation. Their physiology is obscure, the more recent theories being, that they are blood-forming glands. They have been classified among the producers of Leucocytes, or the peculiar white-cell, found in the blood and in the lymphatic system, which afterwards changes into the red blood-corpuscle. Quoting from an article by G. G. Lovell, on the function of the tonsils, we learn, that "the newly formed leucocytes remain partly in the lymph vessels, thus remaining partly in the tonsils, as stationary cells, or, in part, emigrate upon the surface, passing through the epithelium." Thus, a protective wall of leucocytes is formed, that stands upon the battlements of these two fortresses, one on either side of that narrow strait which guards the passages to the digestive and respiratory tracts. These little cells, thus, it is claimed, act as warriors, to attack the invading armies of microbes entering with the food or air. Many are slain in this constant warfare, but others, born within the fortress, viz, within the lymph-spaces of the tonsils, rush to fill up the broken ranks, and fight on where the banners hang upon the outer walls. It is an attractive theory and possesses a strongly dramatic interest. Although not strictly proven, it cannot be denied. Much in the study of that minute life within and around us tends to suggest, that such warfare may be in constant progress between these little, individual cells, each with a life-history of its own, which, in time, go to form elements in the blood, muscle, bone, or nerve of their human bearer, and that great, varied mass of micro-organisms which are foreign to the body but which are around us and within us during all our lives, and among which are the carriers of deadly diseases, whose ingress and lodgment within our bodies mean sickness and even death. Again we are attracted to wide fields of discussion, but must return to—our *tonsils*. Whatever may be the function of these structures, their presence, when abnormal in size or when actively diseased, becomes injurious to the general health of the individual thus afflicted, and interferes seriously with the action of the tongue and soft palate. Together with the enlargements of the post-nasal adenoid tissue, both of which conditions commonly exist together, they narrow the air-passages, force the subject to

breathe through the mouth instead of through the nose, and thus tend to produce those deformities of the chest and imperfect development of the child, which Dr. Harrison Allen so fully described to you two years ago.

We are fast coming to the practical application of these dry facts which, I fear, have bored you all terribly, but to which you have listened with a remarkable degree of patience. Before touching upon the subject of what has been been found by others and by myself among deaf-mute pupils, as a result of examinations of the nose and throat and ear, let me guard you against placing undue importance to all lesions. To understand the deformities about to be described, you must have some intelligent conception of the parts involved, and of certain gross changes which they undergo as a result of disease. This has been my excuse for taking you on a dreary pilgrimage over the desert of pathological anatomy. I place confidence in the pluck, endurance, and long-suffering of my audience; and, as yet, you have not risen up against me with the cry, "Hold! Enough! Away with him!"

Care must be observed in considering conditions not strictly normal, lest we exaggerate the importance of conditions not in themselves serious.

Lest my words should have a tendency to place the deaf-mute child before you too much in the light of a wretched subject of disease, let me hasten to prune down any exaggerated ideas that may have formed in your minds. I must, also, ask you to recall this explanation while I am reviewing the lesions which have been found commonly among deaf-mutes. And, first, in regard to abnormal conditions within the nares. Enlargement of the turbinated bodies is a very common condition. To a certain degree, it is found in many individuals who are totally ignorant of its existence, as they are not conscious of any interference with the normal activity of the parts. It is of importance when the overgrowth causes occlusion to the passages, or has increased to such a degree as to press against the septum. Shrinkage of the turbinated tissue, to a certain extent, is also a very common condition, but becomes of importance, when, as a result of this sclerosing or hardening process, the glandular element of the mucous membrane is greatly destroyed and its epithelial covering so altered, that the membrane itself loses its true character and is converted, more or less, into a dry, skin-like covering.

Distinctions in regard to Abnormalities within the Nares—Turbinated Bodies.

ntal Deform—when im- nt.

Twists and bends and even fracture of the bridge, as we have noted already, are exceedingly common. They deserve

attention only when causing occlusion to one or both nares or contact and pressure at points between the septum and the outer nasal walls.

"Adenoids" normal and the reverse.

The presence of a certain amount of adenoid tissue in the vault of the pharynx is entirely normal. Its overgrowth, causing pressure on the floor of the soft palate, pressure against the eustachian openings, excess of secretion, and nasal occlusion, are conditions which demand attention. Tonsils that are simply large, but whose structure is entirely normal, and which in no way interfere with the action of neighboring tissues, need not be looked at twice. However, when you examine a pharynx and see two large, rounded, India-rubber-like balls, that project far out from the sides of the throat — perhaps almost touching in the median line—which press on the sides and base of tongue, and which press upwards against the palate, what is the use of trying to make the deaf-mute thus accoutered, talk? It seems to me, that you might as well make the attempt on one whose tongue has been gagged and whose mouth you have stuffed with putty. Such a condition of hypertrophy is most frequently made worse by the existence, also, of enlarged "adenoids" in the vault of the pharynx.

Tonsils which demand attention.

The subject of overgrowth of lymphoid tissue in the throat and posterior nares is a large one, and we cannot enter upon it. There is much similarity in structure and in development, and, probably also, in function, between the different elements that go to form that ring of lymphoid tissue which surrounds the entrance of the respiratory and digestive tracts. Starting at the base of the tongue, where it lies between that organ and the epiglottis, its lateral parts are formed by the faucial tonsils, its upper arch by the adenoid mass of the posterior nasal space. Owing to causes which seem to influence the entire growth of the individual, these lymphoid structures outgrow their natural size, and, as a result, soon take on conditions of disease. We say such individuals are *strumous*, *scrofulous*, etc. They are apt to be pale, with flabby tissues, poor digestion, generally weak physique, and with certain defects in the skeleton, which modify the shape of the bones and joints and of the frame-work of the chest.

Lymphoid tissue of the Upper Respiratory Tract.

Dr. Allen has referred fully to the relation which occlusion to the respiratory tract, by reason of these lymphoid enlargements, bears to the development of the mental and physical states

of children of this type. I refer, only, to the interference which these enlargements must have in your work as teachers of the oral system. It is not my place, here, nor would it be regarded by my medical brethren as in any way proper, that I should now go into the details of treatment, and lecture to you of instruments and drugs and their uses. This, I shall not do; yet, I cannot leave this subject of hypertrophied tonsils and enlarged posterior nasal "adenoids," without asking you to keep your minds free from old-time prejudices regarding the removal of these occluding masses. Whatever the function of these parts may be when normal, their removal, in states of overgrowth and disease, has too often resulted in improvement of the child's speech—I say nothing of the marked improvement in the general health—to persuade us that they should be retained for the sake of any good they may accomplish. The danger attending removal has been greatly exaggerated. The operation is done, now, so commonly, that its proper technique is well understood. Instances of dangerous hemorrhage have occurred in cases, only, where total extirpation of the tonsils has been attempted. This is unnecessary. The same fact is true of the post-nasal adenoids. When properly operated upon, I cannot see how a fatal or even alarming hemorrhage can possibly attend their removal. These masses do not "*recur*," or reappear, and the good results following their removal are most marked—in regard to the patient's general health, in that normal respiration is effected; in regard to vocalization, by causing the release of tongue and palate from pressure. As you may know, the presence of enlarged tonsils and post-nasal adenoids causes the voice to be dull, dead in tone, utterly without resonance, the voice of an individual suffering, at once, from "cold in the head" and sore throat. In the formation of vocal sounds, the parts attempt to perform their function, in spite of the disadvantages under which they labor. The ordinary child has the aid of its sense of hearing and can approximate the normal tones. Nature always does her best, even with imperfect machinery, and by many modifications of movement, the various organs of speech in such individuals perform their functions. But, in the deaf-mute, thus burdened, the chances for gaining speech are greatly lessened. The jaws, themselves, are altered. The face of such a child resembles, in a degree, that of a fish out of water. The mouth is depressed at the angles and is open. The upper lip and cheek, falling heavily

Importance of removal of diseased and Occluding Tonsils and "Adenoids," especially in the case of Oral-pupils.

Malformations of the Mouth and Jaws resulting from Mouth-breathing caused by presence of Enlarged Tonsils and "Adenoids."

against the sides of the upper jaw, press these parts together, so that the hard palate is narrowed, being compressed into the form of a high Gothic arch. By reason of this lateral pressure, also, the front teeth are crowded together; the upper incisors, forced together into a projecting angle, instead of the usual half arch, tend, also, to face with their cutting-edges outwards; the lower incisors fail to touch them, or, if contact occurs, their edges touch the inner surfaces of the upper incisors far behind the latter's cutting-edges. Thus the upper jaw is narrowed and lengthened while the palate is narrowed, and changed from a low dome-shape to the high angular arch. The child is constantly *gulping*, as though swallowing air, especially in attempting to speak. In reality it is freeing the pharynx and post-nasal space from the excessive secretion of mucus, with which such cases are burdened. You know the various shapes which the oral-cavity assumes, in forming the vocal sounds. How can a mouth, so deformed, arrange itself into the proper position, especially when the pupil's eye, alone, can be the guide, or at most, his sense of touch? With great difficulty can a mouth, so deformed, widen its horizontal and vertical diameters, or vary its depth, as must be done in forming the various vowel sounds. Much less easily can the consonants be produced, demanding free play of tongue, at its base and tip, and of palate.

Difficult for such children to Articulate properly.

But, you will say, "this sad, melancholy, and fish-faced mute, which you have so heartlessly described, is an extreme case ; we seldom meet with him in the class-room!" But I have met him in the examining-room, after he has passed from the oral class down to the manual school, branded as an "*oral failure.*"

I do not wonder at the failure! I wonder at the hopefulness of the teachers who attempted to teach him vocalization with vocal organs thus shackled. My case is not an extreme one. It reappears again and again, varying not so greatly in degree. The tonsils may be slightly swollen, the nasal chambers somewhat freer, than in the individual we have pictured, but the results of training will be very similar, or but a few degrees better. Among your pupils whom you count as successes, are very many whose articulation would be far better, if the mechanical obstructions, caused by the conditions which I have mentioned, had been removed before oral training had been commenced. Perhaps benefit might follow removal of such obstructing

masses even at a later period; yet, pupils learn certain tricks in articulation, often forced upon them by the existence of deformities, which remain after these latter have been corrected. Treatment for such conditions should be resorted to, early, for another reason. That is, because the malformations of the upper jaw, involving the alveolar process and palate, are formed in early childhood, before the bones of the face have entirely completed their development. Mouth-breathing should be overcome during the early stages of this period. So much for this part of our subject.

Defects of the Mucous Membranes of Nares and Pharynx—when important.

In regard to certain defects of the mucous membrane, which I shall mention, namely, Sclerosis, Hypertrophy, Engorgement, or passive congestion, let me say, that these various conditions are exceedingly common among all classes of people in this country. The laity classify them all into one variety of disease, to which they give the general name, "*Catarrh.*" Of course, such generalization means nothing, yet you will recognize this one mysterious and awe-inspiring word, as associating itself in your minds with many wood-cuts of ladies and gentlemen, which have adorned the advertisement columns of your secular and, even, religious newspaper; while, beneath the portrait, will be described, in harrowing detail, the dreadful sufferings of the original from "Catarrh;" and yet, how a helpless and healthless existence has been changed to a paradise of perfect health by the use of Dr. So and So's "Catarrh Remedy." Now, you will find in my report of cases, that inflammatory conditions of the membranes lining the pharynx, naso-pharynx, and nares, are quite common among deaf-mutes. But I must warn you, that, in this country, very few individuals, otherwise in perfect health, are entirely free from the less serious forms of nasal or pharyngeal catarrh. Comparatively few, however, are sufficiently inconvenienced by symptoms, to require medical treatment. So you will perceive, that, in examinations of the noses, throats, and ears of deaf-mutes, we must bear in mind, that divergences from the normal are common to large classes of individuals, and it has been my aim to take note of such lesions, only, as they interfere decidedly with the functions of the parts they involve.

LECTURE II.

In his able lecture of two years ago, Dr. Harrison Allen called attention to some examinations upon the noses, throats, and ears of pupils in the Pennsylvania Institution for the Deaf and Dumb. Since Dr. Allen referred to those cases, the report of this examination has been published and some of my hearers may have read it. I regret, that a carefully tabulated and detailed report of the work, which was sent to the Volta Bureau, has never been printed. The mere enumeration of lesions is of considerable interest, but a matter of still more interest and importance is the record of the associated conditions in each case. The reader becomes, thus, the examiner for himself. The detailed report placed each case in this point of view.

The Examinations at the Pennsylvania Institution, in regard to Nares, Post-nares, Throat and Ears; 415 pupils.

I desire, now that we have reviewed in a very general way, the common forms of deflection from the normal, which may influence vocalization, by mechanical obstruction, closure of resonating cavities, and interference with normal respiration, to take up these examinations conducted at the Pennsylvania Institution, and to add to its list of cases others that have been collected from similar observations in other schools. As my hearers probably know, the pupils of the Pennsylvania Institution are taught by oral and manual methods. Formerly, it was left to the judgment of the teachers or guardians of the children, by which system the pupil should be trained. It is the rule now, to place every new pupil in the oral department, where he or she is given a thorough trial. Since the oral school was started, several years ago, there have been frequent instances where the teachers have been unable to accomplish satisfactory results, and pupils thus failing to acquire vocalization, have been sent to the manual department, their oral training being considered a failure. Thus there has been developed a class of pupils whom we may call *oral failures.* It is to this class that I desire to direct your attention most especially. The most common serious affections of the upper respiratory tract found among these pupils were located in the post-nasal space and pharynx. Next in importance, were occlusions of the nares by contact between hypertrophied turbinated bodies and septa, or by exostoses from the latter, in contact with enlarged, or occasionally, with atrophied turbinates.

The almost constant condition of the vocal cords was weakness of the crico-thyroid and thyro-arytenoid muscles. The adduction and abduction movements of respiration were normal,

but the vocal cords were thin, grayish in color, relaxed, and manifested a weak degree of tension. Such was the case among the 303 pupils of this school, who had been instructed in the sign-language, only. There were 91 pupils who were receiving training in the oral department. Among these were found conditions of the nares and pharynx which corresponded in character and in ratio of frequency with those observed in the sign-language pupils. The vocal cords, however, approached more nearly the normal condition, especially among the older oral pupils. The most interesting and important observations, however, were found among a group of 21 pupils who had failed to acquire the oral method of speech, and had been sent to the sign-language department as *oral failures*. Among these 21 pupils the abnormalities in the parts found so commonly diseased in the cases of the entire 415 pupils, were in greater ratio than in the other two groups. Thus; deformities, consisting of deviated septa, exostoses, hypertrophied turbinates, causing partial or complete occlusion of one or both nares, were found—

among 303 "signers" in 65 pupils.
" 91 "orals" " 14 "
" 21 oral-failures " 5 "

Posterior hypertrophies of the turbinates were found—

among 303 "signers" in 21 pupils.
" 91 "orals" " 1 "
" 21 oral-failures " 2 "

Adenoid tissue in the vault of the pharynx, causing partial occlusion of this space or pressure upon the eustachian opening, was found—

among 303 "signers" in 57 pupils.
" 91 "orals" " 14 "
" 21 oral-failures " 7 "

Large tonsils, which filled the space between the faucial pillars of their own sides of the throat, or were greatly hypertrophied and diseased, causing pressure on palate or tongue and greatly occluding the faucial space, were found—

among 303 "signers" in 50 pupils.
" 91 "orals" " 21 "
" 21 oral-failures " 5 "

Adhesions between tonsils and faucial pillars, the tonsils being encapsulated, were found—among 303 "signers" in 30 pupils.
" 91 "orals" " 6 "
" 21 oral-failures " 5 "

Abnormal states of the pharyngeal mucous membrane, consisting of simple follicular hypertrophy, sclerosis with follicular hypertrophy, simple sclerosis, atrophy, or venous engorgement, were found— among 303 "signers" in 117 pupils.
" 91 "orals" " 32 "
" 21 oral-failures " 9 "

The vocal bands were, apparently, normal in color and ordinary movement,— among 303 "signers" in 83 pupils.
" 91 "orals" " 63 "
" 21 oral-failures " 12 "

Thus, it will be seen, that the 21 pupils who failed to acquire the oral method, labored under the disadvantages of abnormal vocal organs, in by far greater percentage than existed among the successful oral pupils. But these latter, also, show numerous instances of abnormal conditions. The question of what influence the lesions, which have been enumerated, have upon the general health and mental development of children, is now well understood. It is merely necessary to suggest, that, in many instances, treatment for the relief of these conditions among the 303 sign-language pupils was demanded on such general grounds. But, with the oral pupils, the matter is of even more vital importance; for the occluded nares, stuffed post-nasal spaces, fauces narrowed by enlarged tonsils, pressing, also, upon palate and tongue, must offer great, at times, almost insurmountable difficulties, in the successful training of the oral pupil. The oral method is destined to be employed more and more completely in the schools of this country, as it has been, for a long time, in the deaf-mute institutions of Europe. Such being the case, the importance of a thorough examination of the upper respiratory tract, in all pupils about to undertake this training, is quite manifest. The removal of these mechanical difficulties will save many pupils from complete failure, while the stuffy, imperfect phonation, heard so frequently among "Orals" counted as successful, will be less common than at present.

Examination of 106 additional Pupils, at the Pennsylvania Institution, making 521 pupils in both series of examinations.

Since the examination of the 415 pupils, forming my first series of cases, two classes have been admitted to the Pennsylvania Institution. All new pupils are, now, received in the oral department, so that a fair opportunity is given to every pupil to acquire vocalization. I would refer very briefly to the results of my examinations upon the members of these new

classes. The pupils numbered, in all, 106. The conditions found within the upper respiratory tract correspond with those already recorded. The division into "signers," "orals," and "oral-failures," fortunately, no longer holds. These pupils are all "orals," and I understand that their teachers do not propose to have any "failures." The findings from the examination of these 106 pupils is as follows:—

1.	Pupils whose respiratory tracts appear to be quite normal,	26
2.	Deflections of the nasal septum, causing partial or complete occlusion,	10
3.	Hypertrophied turbinates,	6
4.	Exostoses from the septum, with deflection,	1
5	Atrophic catarrh of nares,	4
6.	Synechial bands, causing adhesion between the septum and turbinates,	1
7.	Hypertrophied adenoid tissue in the post-nasal space,	17
8.	Large tonsils,	12
9.	Encapsulated tonsils,	2
10.	Hypertrophied tonsils showing evidence of an inflammatory process,	10

EARS.

1.	Foreign bodies,	2
2.	Varying degrees of adhesion and sclerosis, classified under the general term, Plastic Otitis,	34
3.	Chronic purulent inflammation of the middle ear,	8
4.	Perforations of the drum-head which have undergone cicatrization,	2
5.	Impacted cerumen,	11

Examination by Dr. James Kerr Love at the Glasgow Institution for the Education of the Deaf; 175 pupils.

I wish to call your attention to the interesting report of Dr. James Kerr Love, aurist of the Glasgow Institution for the Education of the Deaf. 175 pupils were examined and the lesions in nares, posterior nares, pharynx and the ears, recorded. The findings correspond quite fully with my own 512 cases. This fact is of interest, as these series of examinations were made in two separate institutions, one in Scotland, the other in Pennsylvania. Dr. Love is, apparently, quite ignorant of my own work, so cannot have been an imitator of my methods. My first series of cases were reported before he had commenced, or completed, his own report. It is the more interesting, therefore, that we should have, both of us, found the lesions within the respiratory tract of deaf-mutes, to be much the same in two countries which differ so decidedly in climate as do Scotland and our eastern Middle States.

In order to illustrate more fully the importance of these abnormalities, I have copied the notes of the 21 oral failures from my note-book. The great amount of time and space required, will prevent me from detailing cases from the other two

groups of pupils. In making these notes, I have stated simply the appearances observed, without any attempt to exaggerate the importance of lesions. Conditions stated as normal, might in some instances, be counted the reverse. But it must be considered, that, in this country, we can seldom find instances of perfect normality in nares, post-nasal space, or pharynx. In drawing distinctions between the normal and the abnormal, I have placed in the latter category such conditions as appeared to interfere more or less with the functions of the parts involved.

CASE I.

L. K. Aged 21 years; male.

Deaf. Since 2 years old.

Cause. Spotted fever.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Fracture of septum, separating the triangular cartilage from the vomer, and deflecting it to the right, so as to occlude the right nares. Mucous membrane is much sclerosed.

Posterior nares. End of left lower turbinate is greatly hyperthrophied, and almost occludes the left choana.

Tongue. Normal.

Palate. High, rounded.

Pharynx. Mucous membrane is sclerotic. The tonsils adhere by bands to the pillars of the fauces.

Larynx. Vocal cords hyperæmic; tension not very good. Voice "nasal" but fairly clear.

Ears. The drumheads are retracted; feebly movable.

Detailed re
port of the Exam
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Pennsylvania In
stitution, on 2
Pupils who ha
failed to acquir
vocalization an
had been sent t
the Manual De
partment, as be
ing, "Oral-fail
ures."

CASE II.

J. G. Aged 19 years; male.

Deaf. Since birth.

Cause. Unknown.

Family. Parents are not related; no deaf-mute relatives.

Anterior nares. Mucous membrane is dry; the middle turbinates are covered with dried secretion.

Posterior nares. An injected vessel is seen in the anterior lip of each eustachian opening. The adenoid tissue in vault is enlarged, but does not appear to cause occlusion.

Tongue. Normal.

Palate. High, and narrow.

Pharynx. Normal.

Larynx. Vocal cords hyperæmic; voice is fairly clear.

Ears. Left. Drumhead is retracted; is movable, except the manubrium, which is adherent. There is a cicatrix in center of drumhead, posterior half.

Right. Drumhead retracted, movable; scar in centre.

Hearing. Trace of hearing by bone-conduction.

CASE III.

G. D. Aged 16 years; male.

Deaf. Since 4 years old.

Cause. Scarlet fever.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Normal.

Posterior nares. A large mass of enlarged adenoid tissue in centre of vault; not occluding.

Tongue. Normal.

Palate. Normal.

Pharynx. Normal.

Larynx. Normal.

Ears. Left. Canal closed by impaction of cerumen.

Right. Canal filled with cheesy, foul-smelling pus.

CASE IV.

H. R. Aged 15 years; male.

Deaf. Since birth.

Cause. Unknown.

Family. Parents not related; two brothers, and many other relatives are deaf-mutes.

Anterior nares. The right lower turbinate is enlarged and is in contact with the septum. The floor of nares, on either side of the anterior nasal spine of superior maxilla is abnormally high.

Posterior nares. Mucous membrane is sclerotic.

Tongue. Normal.

Palate. Normal.

Pharynx. The right tonsil is much enlarged, filling space between its faucial pillars, and projecting into the fauces.

Larynx. Vocal cords show a fair degree of tension.

Ears. Left. Large scar at end of manubrium; drumhead much retracted.

Right. Drumhead is thickened; feebly movable.

Hearing. Trace of hearing by bone-conduction.

CASE V.

L. E. Aged 16 years; female.
Deaf. Since birth.
Cause. Unknown.
Family. Parents not related; no deaf-mute relatives.
Anterior nares. Normal.
Posterior nares. Vault is nodular and irregular by reason of adenoid masses; not occluding.
Tongue. Normal.
Palate. Normal.
Pharynx. Very irregular, lumpy posterior wall, the mucous follicles being much enlarged; mucous membrane of soft palate shows much venous engorgement.
Larynx. Vocal cords hyperæmic; fairly good tension.
Ears. Drumheads are large, thin, retracted, movable.
Hearing. Trace of hearing by bone-conduction.

CASE VI.

H. Z. Aged 15 years; female.
Deaf. Since birth.
Cause. Unknown.
Family. Parents are deaf-mutes (congenital); one brother, two sisters and many relatives are deaf-mutes. Mother has one sister and four brothers who are deaf-mutes; father has one sister, a deaf-mute.
Anterior nares. Normal.
Posterior nares. Normal.
Tongue. Normal.
Palate. Normal.
Pharynx. Tonsils are nodular and fill spaces between their faucial pillars; do not occlude the faucial space.
Larynx. Vocal cords; gray, thin, apparently good tension.
Ears. Left. Drumhead slightly retracted.
Right. Drumhead has good lustre, is retracted; very feebly movable.
Hearing. Trace of hearing by bone-conduction.

CASE VII.

E. F. Aged 15 years; female.
Deaf. Since birth.
Cause. Unknown.
Family. Parents not related; has one brother who is a deaf-mute.

Anterior nares. Spur from vomer, centre, not in contact with septum.
Posterior nares. Normal.
Tongue. Normal.
Palate. Normal.
Pharynx. Normal.
Larynx. Normal.
Ears. Drumheads greatly retracted, immovable.
Hearing. Trace of hearing by bone-conduction.

CASE VIII.

E. L. Aged 14 years; female.
Deaf. Since 4 years old.
Cause. Scarlet fever.
Family. Parents not related; no deaf-mute relatives.
Anterior nares. Large lower turbinates, not in contact with septum.
Posterior nares. Mass of enlarged adenoids in centre of vault.
Tongue. Normal.
Palate. Normal.
Pharynx. Normal.
Larynx. Normal.
Ears. Drumheads both destroyed; otorrhœa from both ears.

CASE IX.

J. S. Aged 16 years; male.
Deaf. Since one year old.
Cause. Scarlet fever.
Family. One brother and one sister are deaf-mutes. The parents are not related; father has several deaf-mute relatives.
Anterior nares. Mucous membrane is sclerotic.
Posterior nares. Contains much thick mucus.
Tongue. Normal.
Palate. Normal.
Pharynx. Venous engorgement.
Larynx. An unusually dependent epiglottis, greatly rounded, with pointed end. Vocal cords could not be seen.
Ears. Large drumheads, good lustre, movable.
Hearing. Trace of hearing by bone-conduction.

CASE X.

H. T. Aged 16 years; male.
Deaf. Since two and a half years old.
Cause. Scarlet fever.
Family. Parents not related; no deaf-mutes.
Anterior nares. Normal.
Posterior nares. Normal.
Tongue. Normal.
Palate. Normal.
Pharynx. Mucous membrane is sclerotic; tonsils are encapsulated.
Larynx. Normal.
Ears. Perforations in drumheads.

CASE XI.

J. F. Aged 14 years; male.
Deaf. Since birth.
Cause. Unknown.
Family. Parents not related; one sister is a deaf-mute.
Anterior nares. Normal.
Posterior nares. Normal.
Tongue. Normal.
Pharynx. Mucous membrane of posterior wall is atrophic.
Larynx. Vocal cords slightly hyperæmic.
Ears. Drumheads are retracted, feebly movable.
Hearing. Trace of hearing by bone-conduction.

CASE XII.

J. K. Aged 12 years; male.
Deaf. Since one and a half years old.
Cause. Measles.
Family. Parents are not related; no deaf-mute relatives.
Anterior nares. Mucous membrane is sclerotic.
Posterior nares. Normal.
Tongue. Normal.
Palate. Left half-arch is slightly higher than the right one.
Pharynx. Normal.
Larynx. Normal.
Ears. Destruction of both drumheads; otorrhœa.
Hearing. Trace of hearing by bone-conduction.

CASE XIII.

J. McE. Aged 17 years; male.
Deaf. Since seven years old (?).

Cause. Sickness (?).

Family. Parents not related (?), no deaf-mute relatives.

Anterior nares. Septum is deflected to left, not occluding.

Posterior nares. Normal.

Tongue. Normal.

Palate. Normal.

Pharynx. Tonsils fill the spaces between their faucial pillars, are encapsulated and adhere to faucial pillars, thus greatly narrowing the fauces, which is still more obstructed by the very large uvula.

Larynx. Normal.

Ears. Drumheads are normal in appearance; feebly movable.

CASE XIV.

M. F. Aged 17 years; female.

Deaf. Since 2 years old.

Cause. Sickness (?).

Family. Parents not related. Three other children in this family are deaf-mutes.

Anterior nares. Normal.

Posterior nares. Normal.

Tongue. Normal.

Palate. Normal.

Pharynx. Venous engorgement of mucous membrane.

Larynx. Vocal cords hyperæmic.

Ears. Impacted cerumen in both auditory canals.

Hearing. Trace of hearing by air and bone-conduction.

CASE XV.

L. W. Aged 11 years; female.

Deaf. Since birth.

Cause. Unknown.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Normal.

Posterior nares. Considerable adenoid tissue in vault.

Tongue. Normal.

Palate. Normal.

Pharynx. Posterior wall rendered very irregular and lumpy by masses of enlarged mucous follicles. Tonsils are large, but soft, and do not occlude the fauces.

Larynx. Vocal cords are relaxed; poor tension.

Ears. Drumheads are much retracted.

CASE XVI.

A. S. Aged 12 years; male.
Deaf. Since birth.
Cause. Unknown.
Family. Parents are cousins; no deaf-mute relatives.
Anterior nares. Mucous membrane is sclerotic and is covered with much thick mucus.
Posterior nares Large amount of adenoid tissue.
Tongue. Normal.
Palate. Normal.
Pharynx. Enormously enlarged tonsils, filling the faucial space, almost in contact with one another; encapsulated and nodular.
Larynx. Vocal cords show a poor degree of tension.
Ears. Drumheads are much retracted; dull in color.

CASE XVII.

J. Z. Aged 17 years; female.
Deaf. Since birth.
Cause. Unknown.
Family. Parents are not related; are both deaf-mutes; 2 sisters, 1 brother, aunts, uncles and cousins are deaf-mutes.
Anterior nares. Hypertrophy of left lower turbinate.
Posterior nares. Normal.
Tongue. Normal.
Palate. Normal.
Pharynx. Normal.
Larynx. Vocal cords relaxed; poor degree of tension.
Ears. Drumheads are normal in appearance, but feebly movable.

CASE XVIII.

S. K. Aged 17 years; female.
Deaf. Since 9 years old.
Cause. Typhoid fever.
Family. Parents are not related; no deaf-mute relatives.
Anterior nares. Slight hypertrophy of left lower turbinate.
Posterior nares. Normal. The vomer appears to be split—as though doubled—through the center of its posterior edge.
Tongue. Normal.

Palate. Normal.

Pharynx. Mucous membrane is sclerotic. The left half-arch of fauces is lower than the right one.

Larynx. Normal; voice clear and distinct.

Ears. Drumheads retracted; feebly movable.

Hearing. Slight degree of hearing by air-conduction in right ear.

CASE XIX.

E. B. Aged 18 years; female.

Deaf. Since 7 years old (?).

Cause. Scarlet fever.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Normal.

Posterior nares. Normal.

Tongue. Short, thick frenum.

Palate. Normal.

Pharynx. Normal.

Larynx. Normal.

Ears. Drumheads move feebly; retracted.

Hearing. Trace of hearing by bone-conduction in right ear.

CASE XX.

W. McC. Aged 12 years; male.

Deaf. Since 3 years old.

Cause. Spotted fever.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Septum is badly deflected to the left. The triangular cartilage is in close contact with the left lower turbinate, and much muco-purulent discharge oozes from between these surfaces.

Posterior nares. Masses of enlarged adenoid tissue.

Tongue. Normal.

Palate. Normal.

Pharynx. Tonsils are large, filling spaces between their faucial pillars. The fauces has the general shape of an inverted V, and is narrow.

Larynx. Vocal cords are slightly hyperæmic; show a fair degree of tension.

Ears. Left. Drumhead is thick, granular, and retracted.
Right. Impacted cerumen, closing the canal.

Hearing. Trace of hearing by bone-conduction, right side.

CASE XXI.

J. F. Aged 12 years; male.

Deaf. Since birth.

Cause. Unknown.

Family. Parents not related; no deaf-mute relatives.

Anterior nares. Slight hypertrophy of both lower turbinates.

Posterior nares. Enormous enlargement of both lower turbinates, so that they extend beyond the posterior end of the vomer, swelling around, obscuring its lower half, and coming in contact with each other.

Tongue. Normal.

Palate. Narrow and high.

Pharynx. Tonsils encapsulated; mucous membrane of pharynx is sclerotic.

Larynx. Vocal cords show good tension; the arytenoids "interfere" with one another, the left tending to overlap the right.

Ears. Drumheads are greatly retracted and dull-white in color.

General Remarks on this series of cases.

Of this list, it might be said, that nine cases present fairly normal vocal organs, viz., cases 6, 7, 9, 10, 11, 12, 14, 18, 19, while twelve cases, viz., 1, 2, 3, 4, 5, 8, 13, 15, 16, 17, 20, 21, are burdened with conditions of these parts, which must, to a greater or less degree, interfere with phonation, or with the training by which the deaf-mute is enabled to acquire speech. To what extent these twelve children would have been benefited by the removal of adenoids, enlarged tonsils, and the correction of nasal deformities, it is now impossible to judge, as they have been placed in the sign-language department and their oral training abandoned for so long a time that, practically, such training would have to begin *de novo*. In one case only, No. XVI. of the detailed list, has oral training been continued, the pupil, however, making no advance whatever. A little over one year ago, at the request of this child's mother and teacher, I performed an operation for the removal of the tonsils and post-nasal adenoid. The tonsils were of enormous size, extending from the top of the faucial arches, where they pressed upon the soft palate, to the upper edge of the epiglottis, and projecting so far into the throat as almost to be in contact with each other. They were covered by fibrous capsules.

The boy recovered promptly, and his teacher has lately reported to me as follows: "I have noticed much improvement in Albert's articulation since the operation was performed. He has been entirely freed from the choking or filling up of the throat that attended nearly every attempt at vocalization."

As a result of my examinations and the operative work already done, I believe that the oral pupils should be treated—when treatment is necessary—before any prolonged attempts are made towards vocal training. Children with imperfect vocal organs are apt to acquire habits of phonation based on the presence of abnormalities, which will be more or less permanent even after the parts are rendered free from obstruction. Following this idea, I have operated, for the removal of such obstructions, upon four children in the last year's class, and improvement in the preliminary instruction is already reported by their teachers. The mere fact that tonsils are large, that the septum is deflected, that a small amount of adenoid tissue is seen in the naso-pharynx, is not, in itself, of sufficient importance to render operative procedures necessary. The facts to be considered are, whether the tonsils press upon the palate or sides of the tongue and interfere with their movements; whether the septum is in contact with turbinates or is retaining secretion in concavities of its surfaces; whether the post-nasal "adenoids" are obstructing this space, pressing on the eustachian openings, or causing mouth-breathing. In the reduction of hypertrophied or enlarged turbinates, it is, of course, first to be determined, whether such swellings may not depend upon vaso-motor paresis, and do not improve under sedative, cleansing, local treatment, combined with proper hygiene, diet, exercise, dress, and the general medication indicated.

The careful work of Holger Mygind, of Copenhagen, has demonstrated the central lesions existing, so often, in deaf-mutes, and the changes found within the labyrinth. Doubtless, there are many deaf-mutes who cannot acquire the oral-method, but I believe that failures will be less numerous, if, before the oral-training has advanced beyond the preliminary work, the pupil's organs of phonation, when abnormalities exist, are rendered as nearly normal as is possible.

I have said nothing in regard to the benefit such procedure *has upon* the health of the individual, as my motive was to deal *mianly* with the effects on phonation. It is no longer necessary

to prove the now well-established fact, that improvement in general health is an almost constant sequence to the removal of those obstructing masses which cause "mouth-breathing," or exert pressure upon the vascular tracts lying near the base of the brain.

LECTURE III.

The Ears of Deaf-mutes.

It remains for me to give you a brief description of the conditions of the ear, which are most common to deaf-mutes.

I have already spoken to you, in passing, of the evil results following closure of the openings of the eustachian tubes, and I have mentioned, that such closure may result from the pressure against these openings and against the cartilaginous portion of the tubes, by hypertrophy of the post-nasal adenoid tissue, by hypertrophy of the lower and middle turbinates, and by thickening of the mucous and sub-mucous tissue resulting from long-existing catarrhal inflamation. By far the greater number of your pupils have lost their hearing as a result of these conditions.

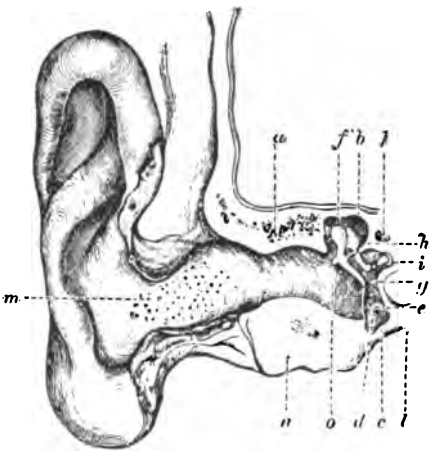

Fig. 5 A.

VERTICAL SECTION OF THE EXTERNAL AUDITORY CANAL, MEMBRANA TYMPANI, AND TYMPANIC CAVITY, VIEWED FROM IN FRONT. (Politzer.)—*a*. Upper osseous wall of the canal. *n*. Lower osseous wall of the same. *b*. Tegmen tympani. *c*. Osseous floor of the tympanic cavity. *d*. Tympanic cavity. *e*. Mambrane tympani. *f*. Head of the malleus. *g*. Lower end of the handle of the malleus. *o*. Short process of the malleus. *h*. Body of the incus. *i*. Stapes in the oval window. *k*. Fallopian canal. *l*. Jugular fossa. *m*. Glandular orifices in the skin of the cartilaginous canal. [From Burnett.

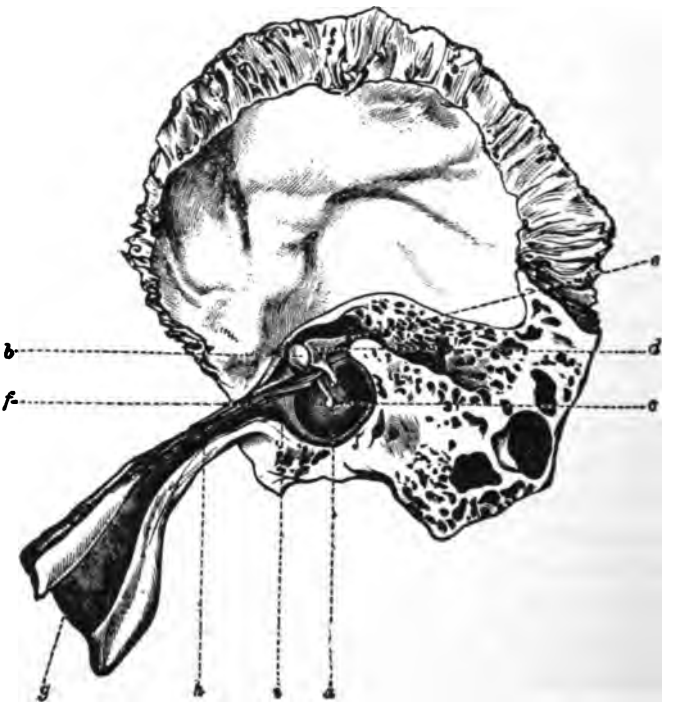

Fig. 5 B

VERTICAL SECTION OF THE RIGHT EUSTACHIAN TUBE, TYMPANIC CAVITY, AND MASTOID CELLS, WITH INNER SURFACE OF THE SQUAMA ABOVE VIEWED FROM WITHIN.—*a*. Membrana tympani. *b*. Head of malleus. *c*. End of the manubrium mallei. *d*. Incus. *e*. Short process of incus. *f*. Tensor tympani muscle. *g*. Faucial opening of the eustachian tube. *h*. Isthmus tubæ. *i*. Tympanic mouth of eustachian tube. [*From Burnett.*]

Brief Anatomical notes on the Ear.

A section made through the head at right angles to the median line, so as to bisect the external auditory canal, middle ear, and eustachian tube, shows the relation of these parts. It will be seen, that the drumhead stands at an angle of about 160 degrees in relation to the walls of the external auditory canal. Back of the drumhead, lies the middle ear cavity, containing the chain of three ossicles. The third, or most inner ossicle, the *stapes*, is set by its foot-plate into the "*oval window.*" This *oval window* is one of the means of communication between the middle ear and inner ear. The most external ossicle, the *malleus*, is set into the body of the drumhead. Vibrations started in the drumhead are transmitted along the chain of ossicles to the foot-plate of the *stapes*, set into the oval window. The plunger action of this foot-plate transmits the vibrations to the fluid filling the complicated twists and turns of the *inner ear*, and into which extend the terminal filaments of the

auditory nerve. Ankylosis, or stiffening of the joints of the ossicular chain, adhesion between the posterior side of the drumhead and the posterior wall of the narrow tympanic cavity, or, simply, adhesion alone of the foot-plate in the margins of the oval window, will weaken the force of vibrations reaching the inner ear or may prevent their passage entirely. Such adhesion may follow, simply, from persistent closure of the eustachian tubes. As a result of this closure, there ceases to be any air within the middle ear cavity to counteract the atmospheric pressure pressing inwards through the external auditory canal. Such pressure without resistance, forces the drumhead inwards, forces the joints of the ossicles together, and forces inwards the *stapes'* foot-plate.

Pathology of Sclerosing Processes within the Middle Ear.

This abnormal state of things interferes very soon with the blood circulation of the parts, inflammation results, and permanent adhesions are formed, which anchor these movable structures and convert the sound-conducting apparatus into a sound-*obstructing* apparatus. Again, as a result or active inflammation within the posterior nares or pharynx, we may find, that this inflammatory condition extends upwards along the tubes, involving the lining membrane of the middle ear. Such inflammation commonly exists during severe "colds in the head," Influenza, Measles, Scarlatina, Typhoid fever, Diphtheria, and a large variety of other general diseases which are accompanied with inflammation of the nose and throat. Resulting from such processes, we may have a variety of lesions, ranging from a simple thickening of the drumhead and the mucous coat of the middle ear cavity, to complete destruction of the entire sound-conducting apparatus by suppurative process, or by a process of stiffening technically called *Sclerosis.*

Sclerotic changes in the Inner Ear.

One or other of these conditions described has been the exciting cause of that early deafness which has prevented your pupils from acquiring speech. There are, however, instances in which the inner ear has been the seat of destructive processes. These have found their way inwards into the sound-perceiving department of the ear by means of the oval or round windows, or by destruction of the posterior wall of the middle ear cavity. They may, however, have started primarily within the inner ear and have caused wide-spread destruction, while the middle ear has been left almost, if not quite, intact. These changes within the inner ear may be classified under the general term of *Sclerosing*

processes, a conversion of that delicate and highly specialized arrangement of nerve cells, laid within an area, which, although small in extent, affords, by reason of its many coils, a wide stretch of surface, into a bony or fibrous mass. Still deeper may be found the lesions fatal to hearing, for the post-mortem table, where we have learned the changes within the inner ears of deaf-mutes, has revealed, also, certain destructive processes which are found occasionally within the brain, itself, which have ruined the cerebral centre for hearing or have spread destruction along those tracts leading through the brain, from this centre to the sound-perceiving apparatus of the inner ear. Let me close this dry review of this subject, by a reference to the conditions revealed by the examinations at the Pennsylvania Institution and the Glasgow school.

Destruction of the Auditory Centre.

Examination of the Ears of 415 pupils at the Pennsylvania Institution for the Deaf and Dumb.

In my examination of the 415 pupils in the Pennsylvania Institution for the Deaf and Dumb, I found conditions within the ear, as follows:—

	Sign-language pupils.	Oral pupils.	"Oral failures."	Total.
Individuals having drumheads which were quite normal in appearance,.....	54	24	3	81
Individuals having the objective symptoms of Plastic Otitis Media,.....	216	56	14	286
Individuals suffering from suppurative Otitis Media,.....	16	11	3	30
Drumheads showing perforations which had healed,.....	45	11	2	58
Cases of occlusion of the external auditory canals by impacted cerumen,.....	24	10	1	35
Foreign bodies found in the external auditory canal,.....	5	0	0	5
Deformed auricle, with imperforate auditory canal,.....	2	0	0	2
Individuals having decided trace of hearing,.....	62	28	10	100
Exostosis in bony part of auditory canal,	1	0	0	1

Second series, of Examinations, 106 Pupils at the Pennsylvania Institution.

From the second series of examinations made upon 106 pupils the following is recorded:—

Plastic Otitis Media,.....	34
Chronic suppurative Otitis Media,.....	8
Perforations of the drumhead which have undergone cicatrization,...	2
Impacted cerumen,.....	11
Foreign bodies,.....	2

General Remarks on these two series of Examinations at the Pennsylvania Institution.

Frequency of Sclerosis of Middle Ear.

Frequency of the Presence of masses impacted Cerumen, or of Foreign Bodies in the External Auditory Canal.

It will be seen from these lists how frequent are the instances in which the appearance of the ears indicated a sclerosing process, either at an end or still active, within the middle ear. Another fact of some interest is the relatively large number of individuals whose auditory canals were closed by plugs of cerumen, as well as by substance totally foreign to the body. Such substances consisted of pieces of tin, sticks of wood, dead fly, and rolls of paper.

In some instances, the appearance of the occluding mass and of the skin lining the auditory canal indicated, that the foreign matter had remained for long periods within the canal.

Important that the Ears of Deaf-mute Pupils should be carefully examined.

Such facts lead me to believe, that the ears of deaf-mutes should be examined carefully and all such substances removed, as their presence, in many instances, may lead to cerebral or nerve irritation, and interfere with the health of the pupil. I have seen cases where a persistent cough, treated for many months by medicine internally, and by application of medicated pigments to the throat, under the impression that the individuals suffered from pulmonary and laryngeal disease, have been cured promptly and completely by clearing the auditory canals of foreign bodies or impactions of cerumen.* These nervous manifestations result from the intimate nerve connection of the external auditory canal, with the great Pneumogastric nerve, the Glosso-Pharyngeal nerve, and by the Otic ganglion, with the Sympathetic nerve system.

Another reason why the ears of deaf-mute pupils should be examined, is, that we may discover and properly treat all cases of Otorrhœa. Such suppurative process, if neglected, leads to serious interference with the victim's general health, by reason of the constant absorption of the purulent and offensive discharge, thus maintaining, in such subjects, a low degree of blood-poisoning. These individuals are, in addition, exposed constantly to the danger of extension of the suppurative process into the mastoid cells, the inner ear, and the cerebral membranes.

By far the most frequent cause of cerebral abscess is to be found as a result of the neglect of such suppurative cases. The deaf-mute appears to be much less complaining, in regard to such conditions, then would be the case with ordinary individuals. Finding it difficult to attract the attention of his caretakers to his occluded or discharging ear, he may, in time,

*These patients had not been treated by physicians, but by unskilled members of their own families.

become accustomed to the pain or discomfort, especially as no interference is caused with his power of hearing, which is already lost.

Many pupils show a decided trace of hearing.

It will be noted, also, how large is the number of pupils showing decided trace of hearing. In my own series of examnations, this question was not developed with as much care as Dr. Kerr Love has devoted to it.

I find that the hearing-power, when present, except in an exceedingly limited number of cases, is so imperfect, that it would be quite useless to attempt any treatment for improvement in this regard. Dr. Kerr Love, of the Glasgow Institution for the Deaf and Dumb, has recorded the results of his examination upon the ears of 175 pupils. Taken as a class, he finds that "congenital deaf-mutes are *deafer* than acquired deaf-mutes." Among the acquired deaf-mutes, he finds the most frequent cause of deafness to have been "Brain Fever." He finds:—

Dr. J. K. Love's Examination of the Ears of Pupils, 175, at the Glasgow Institution for the Education of the Deaf.

	Acquired deaf-mutes.	Congenital deaf-mutes.	Doubtful.	Total.
The drumheads normal in.....	28	26	7	61
Suppurative otitis media active or extinct	18	11	3	32
Charges indicating non-suppurative catarrh	34	33	11	78
Unexamined cases.....	1	..	1	2
Meatus too narrow for examination...	..	2	..	2

About seventy per cent. of these pupils showed distinct "thickening of the tonsils, pharynx, or of both these structures." In thirty-three per cent., the tonsils were enlarged.

I think that these findings of Dr. Kerr Love tend to emphasize what I have already remarked in commenting upon the results of my own examinations.

As a means of comparing the aural conditions of the pupils of deaf-mute schools with pupils of ordinary educational institutions, I would call attention to a paper by Dr. Thomas Barr, of Glasgow, in the *British Medical Journal* for September 28, 1889. The article is termed, "An Investigation as to the hearng of School-children." Dr. Barr, at first, refers to the great liability of children to aural disease. Among 3,436 persons, treated in the Glasgow Ear Hospital, 1169 or 35 per cent. consisted of children under fifteen years of age, "the time of life

Dr. Thomas Barr's Examination concerning the Hearing power of School Children.

when speech and education are usually acquired." Dr. Barr's examinations were conducted upon six hundred children varying in age from seven to fourteen years. They were about equally divided as to sex, and were selected from two schools of quite opposite social grade. One hundred and sixty-six pupils or 27.66 per cent. were found defective in one or both ears. For the sake of comparison, he quotes the findings of other observers, from similar examinations, thus—Sexton, of New York, found the percentage of partially deaf pupils to be 13 per cent.; Weil, of Stuttgart, 33.37 per cent.; Moure, of Bordeaux, 17.0 per cent.; Bezold, of Munich, 22 per cent. Dr. Barr found that the imperfect hearing among the pupils whom he examined was associated frequently with nasal disease and with a certain abnormal tendency to "take cold in the head."

Other Examinations regarding the Hearing-powers of School Children.

I would refer, also, to a paper by Dr. S. S. Bishop, "A Statistical Report of 5,700 cases of ear disease, classified by age, sex, occupation, and disease"; Transactions of 9th International Medical Congress, 1887. This paper is of especial interest, as it gives us a comparison between the frequency of aural diseases found among the pupils of two deaf-mute institutions, and of those found among a large number of patients from aural diseases, for which they are undergoing treatment. Of the entire 5,700 cases—

Dr. S. S. Bishop's Examination of 5,700 cases of Aural Disease.

5.1 per cent. had acute catarrhal inflammation.
5.3 per cent. " " suppurative "
53 per cent. " " non-suppurative "
The external ear was affected in 8 per cent.
The internal " " " " 2 " "

Deaf-mutes constituted 6 per cent. of the 5,700 cases. The two sexes were affected in about equal proportions. Children under fifteen years of age constituted about 28 per cent. of the whole number of cases.

In closing this series of lectures upon the gross pathological changes which have been observed within the ears and upper respiratory tracts of deaf-mutes, we may find it of advantage, that the main points of our study should be condensed into the conventional series of "conclusions," a sort of moral to the tale.

Following this plan, therefore, I would present the following review of our discourse, to which are added impressions of my own based on experiences which the limit of our time has not allowed me to place before you in full explanation:—

CONCLUSIONS.

Frequency of Abnormalities of Nares, Post-nares, and Pharynx.

1st. We have evidence, that abnormalities of the nares, naso-pharynx, and pharynx are found very commonly among deaf-mutes, and, that such lesions tend to interfere, in varying degree, with the successful training of the deaf pupil in vocalization.

The cause of many Failures among Oral pupils.

2nd. Although in no way claiming that such mechanical causes are the only grounds for failure in acquiring speech, it is reasonable to believe, that, in many instances, the presence of hypertrophied tonsils, masses of overgrown adenoid tissue in the naso-pharynx, deformities of the nasal septum, and hypertrophy of the turbinated bodies cause such obstruction to respiration and such interference with the movements of parts concerned in articulation, that the oral-pupil becomes an "oral-failure." In addition, it may be stated, that where such an extremely unsatisfactory result is not produced, the voice formed in spite of these obstructions is far from being as pure and distinct as would have been the case had the parts been rendered more nearly normal.

Suggestions regarding the Management of Pupils having serious Deformities within Nares, Post-nares or Pharynx.

3d. Before beginning the oral training, the pupil should undergo inspection by the Laryngologist of the school, in regard to the conditions of his nares, posterior nares, pharynx, and ears, and all diseased conditions should be noted. When the examiner finds, that occlusion to parts of the upper respiratory tracts are so pronounced as to cause persistent mouth-breathing or pressure against the tongue or the soft palate, the parts should be rendered as nearly normal as possible, before education of the pupil is commenced. When, however, such conditions are less marked, the child should be placed in the hands of the teachers, to be by them referred back to the surgeon, if, after a fair trial, it is found, that such a pupil fails to progress in vocalization. In short, operative work must be resorted to when necessary. It can be limited to a relatively small number of individuals; yet, it is to be resorted to in all cases, where experience proves, that such procedure is required.

Frequency of Acquired Deaf-muteism.

4th. It seems evident, that by far the majority of deaf-mute pupils have lost hearing as a result of diseases subsequent to birth; *i. e.*, are acquired deaf-mutes.

Sclerosing Processes, the most common Cause of Deafness in Deaf-mutes.

5th. The most common lesions which appear to have caused loss of hearing are to be classified under the term, sclerosing processes of the middle ear. In a certain proportion of cases—the exact percentage I cannot give—this process within the middle ear is associated with a similar condition, which has

attacked and altered the elements of the sound-perceiving apparatus, *i. e.* the *Labyrinth*. Congenital deafness is a most uncertain diagnosis, and can be positively elucidated only on the post-mortem table — a location as unsatisfactory for the pupil and his friends, as it is interesting to the scientific investigator.

I believe it to be a far from common condition, and that it is found mainly among the offspring of persons suffering from Alcoholism, Syphilis, Epilepsy, or whose cerebral development is imperfect, such as cretins and idiots.

Causes of Middle Ear disease.

6th. The common cause for the middle ear diseases associated with loss of hearing are the exanthemata, the neglect of proper hygiene during childhood, injudicious treatment during attacks of acute inflammation of the nares, pharynx, and middle ear, and the existence of abnormalities of the upper respiratory tract, which cause occlusion of the air-passages, pressure on the lower portions of the eustachian tubes, and chronic inflammation of the entire tract.

Importance of placing Deaf-mute children early in Oral Schools.

7th. I believe, that attempts to restore hearing to a child almost totally deaf and who is, also, mute or semi-mute will result, usually, in failure, and that, as early as possible, such children should be placed in institutions for oral training. When the attempt at medical treatment appears to be rational, it should not be continued for a term of months after its hopelessness has been made manifest. A few months, at most, should decide this matter, and the child should, then, be referred to the proper school for its oral training.

I have taken you over wide fields, at a rather breathless rate of speed; not the flowery meadows of the world of literature, where poets sing to you of the beauties of the life within, and of that without, the soul; where the grave philosopher tells you of the things which go to make our joy and sorrow; where the jester laughs away the hours, and bids you laugh, if you would kill Dull Care. Our way has led through those shadeless levels of dry facts which belong to what we call the world of science. I must thank you for your company, and for that friendly spirit which has not grumbled at my cuts across lots, turnings, and counter-marches, but, which, like Charity itself, has endured all things and endured to the end. In thanking you for this rare patience, I would, also, express the hope, that you have gathered a few handfuls of sand in our desert-walk, and, that, among them, something of worth may remain to you after the useless part has been cast away.

VI, 70

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

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[PROCEEDINGS ISSUED IN SECTIONS.]

PROGRESS IN THE AMELIORATION OF CERTAIN FORMS OF DEAFNESS AND IMPAIRED HEARING

BY

DR. J. C. GORDON.

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BY

DR. J. C. GORDON

OF THE

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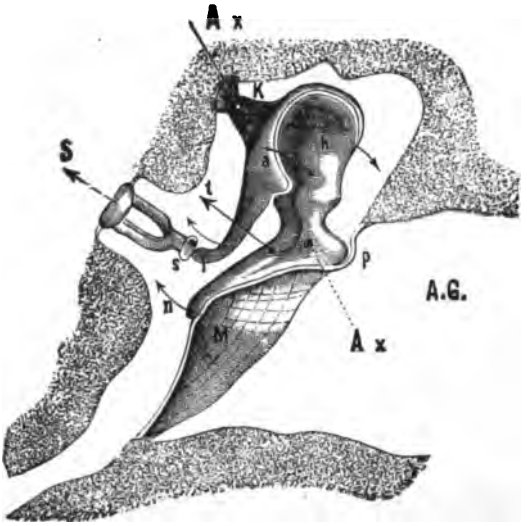
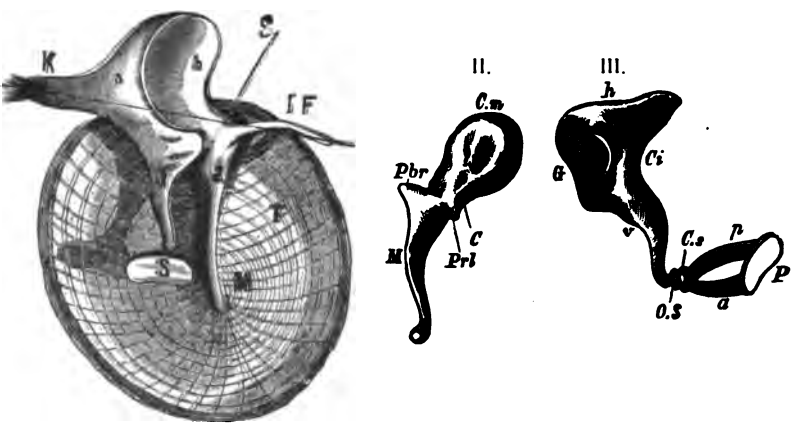
WASHINGTON, D C.



TYMPANUM OR MIDDLE EAR, AUDITORY OSSICLES (left) MAGNIFIED—*A G* external auditory meatus: *M*, membrana tympani which is attached to the handle of the malleus *n*; and near it the short process, *p*; *h*, head of the malleus; *a*, incus; *k*, its short process with its ligament; *l*, long process; *s*, orbicular ossicle so-called; *S*, stapes; *Ax*, *Ax*, is the axis of rotation of the ossicles it is shown in perspective, and must be imagined to penetrate the plane of the paper; *t*, line of traction of the tensor tampani. The other curved arrows indicate the movement of the ossicles when the tensor contracts; *t*, grooved prominence.



I. TYMPANIC MEMBRANE AND AUDITORY OSSICLES (left) SEEN FROM WITHIN, *i. e.*, from the tympanic cavity. *M*, manumbrium or handle of the malleus *T*, insertion of the tensor tympani; *h*, head; *lF*, long process of the malleus; *a*, incus, with the short (*K*) and the long (*l*) process; *S*, plate of the stapes; *Ax*, *Ax*, is the common axis of rotation of the auditory ossicles; *S*, the pinion-wheel arrangement between the malleus and incus.

II. and III. THE AUDITORY OSSICLES (right).—*C. m.* head; *C*, neck; *Pbr*, short process; *Prl*, long process; *M*, handle of the malleus; *Ci*, body of Incus; *G*, articular surface; *h*, short, and *v*, long process of the incus; *O S* so-called lenticular or orbicular ossicle: *C*, *s*, head; *a*, anterior, and *p*, posterior limb of the stapes: *P*, plate or foot-piece of the stapes.

PROGRESS IN THE AMELIORATION OF CERTAIN FORMS OF DEAFNESS AND IMPAIRED HEARING.

It seems a little remarkable that those whose life-work is devoted to the amelioration of deficiencies due to deafness, should know so little about the organ of hearing as most of us do. And it will certainly be entirely inappropriate for me to attempt to give an explanation of the ear after the elaborate course of lectures on this subject by Dr. Harrison Allen at Lake George.

In the great majority of the cases we have to deal with, the trouble in hearing is chiefly with the curious conducting mechanism of the middle ear. The statistics furnished in regard to deafness are of very little value indeed, in helping us to render any benefit to those who are deaf, however interesting they may be in other respects. They furnish no clue to treatment by surgeons or others. In the great majority of cases of deafness as a result of disease, the disease is in the middle ear, and whatever be its character, the ultimate result in general, is a thickening or partial loss of the tympanum, an ankylosis or closing together of the joints of the bones of the ear; and, worst of all, the plate of the stapes becomes utterly unable to work, or move. In a number of cases examined it has been found that the play of the stapes was absolutely prevented, so that even a mallet and chisel could with difficulty detach the adhesions.

Now, in the medical practice of the present day, great efforts are made to effect the mobilization of the transmitting mechanism. Aurists meet with insuperable difficulty in many cases owing to intra-tympanic adhesions, and science has so far not discovered any absolutely certain way of overcoming these adhesions by any merely medicinal treatment, or system of massage without recourse to aural surgery.

Seventy-two per cent. of deafness from disease is connected with the thickening of the tympanum, which renders the transmitting mechanism in the middle ear utterly useless. This percentage has been obtained from 2,794 cases out of 4,142 examined by

Blake, Burnett and Spenser. About 25 per cent. are connected with the outer portion of the ear; and not more than 3 per cent. at most are connected with the inner ear, the essential organ of hearing. The portion of the labyrinth, known as the semi-circular canals is now generally admitted not to be an organ of hearing, but of balancing, and of direction or co-ordination of movement.

This transmitting mechanism becoming stiffened and comparatively useless, the problem has been what to do with it. Early in the century it was recommended to perforate the tympanum and let air into this cavity, hoping that would be of some benefit. The eustachian tube, frequently becomes practically closed, so that there is a difference of atmospheric pressure between the outside and inside of the tympanum, causing an excessive thrust upon the tympanum and chain of bones, and reducing the elasticity of these parts. These perforations have been made, producing an equilibrium, and in certain cases benefit has been derived from this slight surgical operation,—the perforation of the tympanum. The difficulty about it is that these perforations heal up rapidly, and need to be opened over and over again, and of course the patient objects to that. In the operation as now performed the tympanum is removed permanently in many cases.

Late in this century, surgery has made such progress that aural surgeons have undertaken to operate upon these three bones, or portions of them, in connection with the tympanum, effecting the removal of the tympanum, sometimes effecting the removal of the malleus, and in some cases disarticulating at the first joint, and in others removing the incus; but the latest and the most startling operation consists in the removal of the stapes, something which until recently it was deemed quite impossible to accomplish by any legitimate surgical operation.

Partial excision of the drumhead was recommended by Sir Astley Cooper, and others; but the drumhead and malleus were not excised until 1872, when Schwartze performed the operation. He removed the major part of the tympanum, and removed the malleus in 1873. Five years later, in 1878, Kessell of Jena, reported the removal of the drumhead, the malleus, and the incus, and in a short time after that, he performed the operation in five other cases. The results were highly favorable to the hearing,

but a growth rapidly formed, the tympanum closed up, and there was little benefit from the operation ultimately.

Kessell's experiments on the lower animals, on dogs, birds, and especially pigeons, in 1871, were very instructive. He removed from these the stapes and other portions of the apparatus corresponding to the same in the human ear. In a very short time after the operation was performed, and healing occurred, these animals apparently heard as well as before—quite as well perhaps as any animals, and much better than in the case of persons whose transmitting mechanism is impaired in any way. The experiments upon these animals led Kessell to attempt several other experiments of a like character. In 1881, Lucae reported the excision of the drumhead and malleus in 25 cases. There was no deterioration of hearing in any, and a remarkable improvement in hearing in a number of them. In 1883 his operations exceeded 40, and still with good results in a majority of them; while there was no benefit in a few cases, on the whole the results were favorable. In 1885, he published the results of 53 operations. In all of them he removed the malleus, and he performed the removal of the incus in some cases. In a resumè of Lucae's cases, we find that in thirty of them, there was an adhesion and thickening, and the ankylosis of these small bones was considerable. In 9 cases the hearing improved considerably; in 19 cases the hearing improved slightly; in 18 cases the hearing was no worse; in 7 in which it was bad when he began, the deafness was increased.

Taking this in another way: among Lucae's cases there were 28 cases of improvement in which the high tones of the human voice were heard better than before; in 21 of these cases the opening in the drumhead remained open; in 6 there was an entire closure of the drumhead. Stacke of Erfurt reports recently ten cases of the removal of the malleus, and all of them showed marked improvement of the hearing. A prominent aural surgeon in the city of New York, whom many of you know by his works, Dr. Sexton, has been one of the most daring, consistent with caution, yet most successful in the line of middle-ear surgery. His first operation for chronic purulent inflammation of the middle ear was in 1886. He could not practically operate as he desired, until the great advance of electric science enabled him to use the electric light in the illumination of the middle ear. In 1888 he reported 29 cases, 15 of which were cured

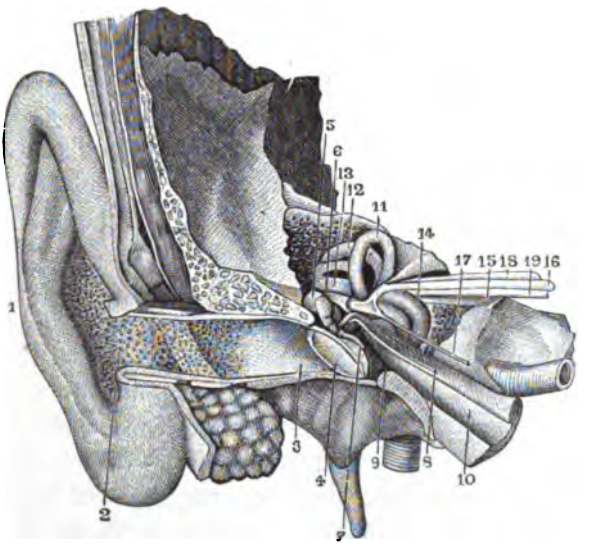
completely, and 13 improved. Of these cases, in 19 he removed the malleus and incus, in 7 he removed the malleus alone, in 3 he made an incision of the drum. He took out the incus, leaving the stapes in place. The hearing indicated a marked improvement in 11 cases. The gain for the human voice was very considerable indeed, from 75 to 100 per cent., which made it worth while to undergo the operation.

Now I want to say a word in regard to Dr. Sexton's operations. He says that when this operation is indicated, the patient need have no fear; the excision of the drumhead, and the removal of the malleus and incus, or either one, or both of them, is performed with very great rapidity, it takes only a few seconds, involves not more than a dozen tiny drops of blood, the patient does not feel it at all, and is usually able to take all his meals, while the healing is so perfect, thanks to aseptic surgery, that there is no need of any further treatment. Of course the case needs to be under the care of the surgeon. But it is all performed very rapidly; the healing in cases of good health is rapid and perfect, and the operation performed, in these cases at least, led to no ill results.

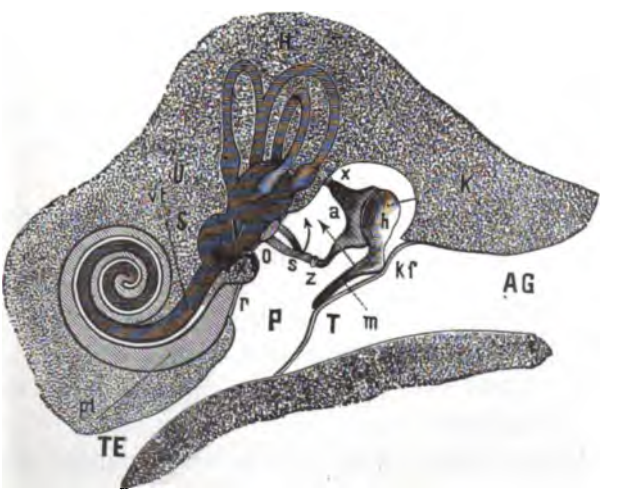
Dr. Sexton has performed this operation since 1886 with universally good results, and in the earliest cases operated upon, the hearing that was improved continues to be as good as it was at the time of the operation, and much better than it was before.

It may be of interest to know when the operation is indicated. In a general way, in cases of deafness, I should say that the friends of persons becoming deaf should consult the highest attainable recognized authority in aural surgery, at the earliest possible moment, and feel perfectly safe in following his advice. But it may be of interest to know that Dr. Sexton and other aural surgeons say that these operations are especially indicated where the deafness, from non-suppurative disease of the middle ear, is noticed to be progressive, following degeneration of the ear, getting worse and worse, — then you may know that this operation is advisable.

Suppose the hearing is very bad indeed, and at a stand-still, then it will rest with an experienced aural surgeon to decide whether an operation should be performed or not; but if the hearing is deteriorating, you may know that the operation is advisable.



SECTION SHOWING ORGANS OF HEARING.—1. Pima or auricle; 2. Conch with orifices of sebaceous and serumenous glands; 3. Osseous portion of external auditory canal; 4. External surfaces of the membrana tympani; 5. Anterior part of the incus; 6. Head of the malleus; 7. Handle of the malleus lodged between the internal and middle layers of the membrana tympani; 8. Tensor tympani with its tendon at a right angle to be attached at the inner margin of the base of the handle of the malleus; 9. Cavity of the tympanum; 10. Expanded portion of the Eustachian tubes; 11. Superior semi-circular canal; 12. Posterior semi-circular canal; 13. External semi-circular canal; 14. Cochlea; 15. The internal auditory canal where the wall has been taken away to show the nerves which its transmits; 16. Facial nerve; 17. The great superficial petrosal nerve passing from the geniculate ganglion of the facial toreach its destination; 18. Vestibular branch of the auditory nerve. 19. Cochelar branch of the auditory nerve.



SCHEME OF THE ORGAN OF HEARING.—*AG*, eternal auditory meatus; *T*, tympanic membrane; *K*, malleus with its head (*h*), short process (*kf*), and handle (*m*); *a*, incus, its short process (*x*), and its long process united to the stapes (*s*) by means of the os orbiculari so-called (*z*); *P*, middle ear; *o*, fenestra ovalis; *r*, fenestra, rotunda; *x*, beginning of the lamina spiralis of the cochlea; *pt*, scala tympani, and *vl*, scala vestibuli; *V*, vestibuli; *S*, saccule; *U*, utricle; *H*, semi-circular canals; *TE*, eustachian tube. The long arrow indicates the line of traction of the tensor tympani; the short curved one, that of the stapedius.

In suppurative disease of the middle ear the operation is generally indicated as the only hope of relief.

I have a letter from Dr. Sexton in which he says that he has no doubt whatever from his knowledge of a number of cases of pupils in institutions for the deaf and dumb that a great many of our children should be operated upon. He thinks that there are a great many children whose hearing would be benefitted, and whose general health and comfort would be very much improved by undergoing this operation.

Other aural surgeons have gone still further, and have performed operations involving the removal, or partial removal, of the stapes. It is an exceedingly tiny bone, and the whole operating field is smaller than the end of a lead-pencil; so that it is exceedingly delicate to operate upon it. There is not very much room; the instrument must be strong as well as sharp, and there must be room for light and for the use of the instrument; and the bones in some cases have to be extracted from a very small passage. Dr. Blake, however, in 1892, attempted with success, the removal of the stapes. He holds that the trouble in a great majority of cases arises from the condition of the stapes; much more so than the condition of either of the other bones. It is the key to the situation, according to Dr. Blake.

Dr. Kessel found in a great many cases that the plate of the stapes was firmly attached and he attempted to improve the condition, not by removing the bone, but by cutting around it. Immediately after cutting around it, a system of massage was practiced, a modification of Hommell's method. of which I shall speak presently.

I may say that the operation upon the stapes by Dr. Blake, of Boston, was performed by him and his assistant in a small number of cases with very remarkable effects. Shortly after Dr. Blake began performing this operation in 1892 he met with an accident which temporarily disabled his hand, and his assistant, Dr. F. L. Jack, then took up the work and performed a number of operations after him.

Of the cases operated upon, I have a summary of sixteen, in which all, or a part of the stapes, was removed. In some cases this bone is in a decayed condition, and crushes under the most delicate handling.

In the 1st case on this record, before operation, a moderately loud voice could be heard at the distance of one foot; after

the operation a moderately loud voice could be heard at the distance of two feet.

In the 2d, an ordinary voice could be heard ten feet away, after the opertion, eighteen feet.

In the 3d case, the whispered voice could be heard eighteen inches away; after the operation, eight feet away. The ordinary voice in this case, singularly enough, could be heard twenty feet away before the operation, and twenty feet away afterward.

In the 4th case, the loud voice could be heard fifteen feet away before the operation, and after it an ordinary voice could be heard twenty feet away. The whispered voice could be heard eight feet away.

In the 5th case, the whispered voice could not be heard at all; after the removal of the stapes the whispered voice could be heard at the distance of two feet. The ordinary voice could be heard at the distance of one foot, and after at nine feet.

In the 6th case, the whispered voice could not be heard at all; after the operation, at a distance of two feet; the ordinary voice, not at all before, but after the operation, fifteen feet.

In the 7th case, the ordinary voice could be heard at nine feet away; after the operation, thirty feet and more.

In the 8th case, the whispered voice could be heard four feet away before the operation, and fifteen feet away after it.

In the 9th case, the whispered voice could not be heard at all before the operation, but it could be heard one foot away after. The ordinary voice could be heard two feet before, and twenty-five feet away afterwards.

In the 10th case, the whispered voice could be heard at the distance of two feet before; and three feet, after. The ordinary voice could be heard six feet before the operation, and nine feet, afterwards.

In the 11th case, the hearing was absolutely gone for all sounds except through a conversation tube; after the operation a whisper could be heard at a distance of seven feet, an ordinary voice ten feet, and a loud voice, twenty feet away.

In the 12th case, the ordinary voice could be heard one foot away before the operation, and a loud voice at ten feet; after the operation a loud whisper could be heard ten feet away, and the ordinary voice, thirty feet.

In the 13th case, the whispered voice could be heard two feet away before the operation, and the ordinary voice four feet.

After the operation the whisper could be heard five feet; while the ordinary voice could be heard at a distance of fifteen feet.

In the 14th case, the whispered voice could not be heard; after the operation, it could be heard at a distance of one foot; the ordinary voice was heard at six inches before, and at a distance of seven feet, after. The loud voice five feet away before, and twenty feet, after.

In the 15th case, there was a remarkable condition of the ear; the stapes and incus could not be found. The malleus was removed, and after the operation there was a slight improvement in the hearing.

In the 16th case, a loud voice could be heard at three feet, and a whispered voice at six inches. After removal of both stapes and incus, the loud voice could be heard at thirty feet and whispered voice at six feet.

These are the first sixteen cases reported by Dr. Jack. Since that, the operation has been performed, in all, by Dr. Jack, in 60 cases; Dr. Blake in 21 cases; Dr. Schwartze in 6 cases; Dr. Ludewig in 2 cases, and Dr. Grunnest in 1 case. About 100 cases in all have been reported, so far, of the removal of the stapes. I am very sorry to say that the later cases have not been nearly so favorable in their results as the earlier ones. The reason of this is unknown to me, but that is the fact. At least in two cases, and perhaps in three, the patients, after undergoing the operation have suffered a great deal from long-continued vertigo. Whether the conditions of the patients were very different from those of the earlier patients, I do not know; but you can see that stapedectomy should not be performed except upon the advice of the foremost aurists; and I am sure that when such authorities as Dr. Blake, or Dr. Jack advise that operation, the sooner you have it done the better.

I am sorry that I have no summary of middle-ear operations by Dr. Roosa of New York, one of the most successful aural surgeons in the world and well-known to you on account of his interest in the deaf and dumb. Dr. C. H. Burnett of Philadelphia, has operated upon the bones of the ear, (the incus alone, or incus and head and crura of the stapes), in a number of cases. I am sorry that I have not the statistics of his operations, for they are very interesting. He confines his operations ordinarily to the removal of the incus, and the head of the stapes, and he says that

he is confident that in a great majority of cases as much improvement will result as from removal of the entire stapes, and the operation is a simple one.

[A Voice: I should like to ask Dr. Gordon;—In the successful cases, did the tympanum heal again, or remain open?]

[Dr. Gordon: In many cases the tympanum healed; while in others it has been left entirely open, which is a very desirable condition. It remained open in 21 of Lucae's cases and closed in 6, and the hearing was improved in all.]

I have records of persons on whom this operation has been performed, in which there is not a trace of this membrane left. The middle ear opens up completely, and it is simply a clean and dry passage. The physical condition is much preferable to that of those whose ears are affected by disease, because they are perfectly clean, and give no trouble whatever. An exposure to the air, under different atmospheric conditions, seems to occasion no inconvenience And I may say that in conversations I had with a number of members of the American Society of Otologists which met in June, I was told that in many cases even if this operation did not result in the improvement of the hearing of deaf children it would be highly conducive to the general health and comfort of the deaf. All discharges are easily controlled, and usually stopped completely. In a great many cases there is the disappearance of headaches, and other unpleasant symptoms with which some children are affected. The operation is advised by some of these otologists even when there is no prospect of hearing, on account of the improvement of the general conditions.

[A Voice: Is there any form of disorder likely to result from leaving an opening in the tympanum?]

[Dr. Gordon: There is not. It is considered preferable to keep this open by some physicians; I cannot say that it is by all.]

[A Voice: Is it possible that the removal of the eardrum may occasion inconvenience in swallowing, by leaving an open passage from the throat to the external air through the eustachian tube?]

[Dr. Gordon: In a great many cases the eustachian tube has long ceased to perform its functions. By the way, the eustachian tube is situated so high that I imagine that ordinarily the opening could not interfere with swallowing It is placed

much higher than we commonly imagine. Take this pencil here. If I push the nares up as far as possible, and push directly back, I strike the end of the eustachian tube.]

The object of this discussion of middle ear surgery is to impress upon the minds of all that the "let alone" policy, wisely advised by judicious physicians in the past is not the highest wisdom for the present. The advances made in aural surgery render it imperative to submit every case of deafness to examination from time to time by aural surgeons with reference to the advisability of operative interference either for the improvement of the hearing or the health and comfort of the patient.

Both auto-massage and massage by mechanical devices for the purpose of improving the hearing, through improved condition of the conducting mechanism, due to enforced exercise, have received a great impetus within a few years.

Hommell's method is a very interesting one, and it has been practiced with very favorable results in certain cases. Dr. Hommell, of Zurich, is a distinguished aurist, who began to lose his hearing a few years ago. He finally hit upon the device named after him, Hommell's method for auto-massage of the conducting mechanism. The operation is a very simple one, and yet it is not advisable to perform it in all cases. He took a finger and pressed upon the tragus, slowly at first, increasing these motions to an operation of one per second for a minute. In some cases the patients will find a peculiar feeling at the end of a minute, and become dizzy. It increases the circulation of the blood in those parts, to say nothing of the mechanical movement of the ankylosed bones. And where the adhesion is not very firm, it has a tendency to mobilize the transmitting mechanism. Hommell recommended that his method of finger-action upon the tragus, be kept up, taking sixty movements per minute for, say a week, when the aurist endeavors to increase the speed to 120 movements per minute. To trace the effect of this, Dr. Hommell tested the hearing from day to day using the ordinary tests employed by physicians and made a chart of the hearing. If the hearing, for two or three days, is diminishing, instead of increasing or holding its own, it is time to stop. But if there is an improvement, this treatment is to be continued. In Dr. Hommell's own case the results were very happy indeed. His hearing increased considerably, and in the case of a number of *patients,* especially young persons of the ages of eight to fifteen

years, the hearing improved, so that the "Hommell-method" has been introduced as a regular practice of successful physicians and aurists both in Europe and America. I presume that it is safer to have Dr. Hommell's method practiced under the direction of a physician than to undertake it yourself, however simple it may seem to be. For in some cases it is barely possible that you might set up an inflammation in this portion of the ear, which might prove somewhat troublesome.

The question of using the phonograph, or vibrometer, or any other instrument for the purpose of improving the transmitting mechanism was considered by the American Association of Otologists in Washington last month, and the experience of a number of physicians and surgeons was given on that occasion. They were, in general, disposed to resort to other methods of treatment, evidently having little or no confidence in the mechanical massage of the ear for the improvement of the hearing.

But there are reputable physicians who claim to have effected very good results in a number of cases by the use of massage.

Dr. Houghton, of New York City, claims good results, especially in catarrhal cases. There is, first, an increase of circulation in all these parts. You can feel that these parts are stimulated. The sense of smell in many cases is intensified and its power temporarily increased; and in some cases there is an increase in the flow of saliva, proving that there is a stimulating process going on, and the result of the exercise is a better nourishment of the diseased parts due to the nerve-stimulation and better circulation of the blood. The theory is that the vibrations tend to promote the normal condition, and to draw off the effete deposits that exist in many cases; there is, not infrequently, a removal of such deposits, and an increase of the mobility of the parts. But when the adhesion of the plate of the stapes, or of the chain of bones, is as firm as it is in a great many cases we have to deal with, no mobilizing of these parts is possible.

Dr. Bissell, of Rochester, attaches a great deal of importance to sound as a therapeutic agent. He uses vibrating strings for this purpose, and has devised an instrument which he uses in his practice. The strings are connected with a sounding board, and the vibrations are transmitted to the ear by tubes from the board. He claims to have achieved good results in a large percentage of cases, but I am not able to give the figures.

You know that Charcot, the great specialist in Paris, made use of vibratory massage from a stringed instrument in the treatment of nervous disorders. He attached great importance indeed to the vibratory treatment of certain diseased conditions of the brain, and of the nerves.

The instrument with which I have experimented a little myself is one that is manufactured in Baltimore,—the vibrometer. It is essentially a banjo. It has the form of the banjo, the banjo-heads are made of wood and of metal, and there is an air-chamber between these two heads. The heads are set in motion mechanically by devices impelled by an electric motor; and these devices are so adjusted that you can give graduated vibrations, in great variety. These vibrations are transmitted through rubber tubes to the ear. I have not been able to use the vibrometer in many cases, but I have diagrams interesting as far as they go. I have not only used the vibrometer to mobilize the conducting mechanism, but from time to time I measured the degree of hearing for a certain kind of sound, as measured by the audiometer made by Professor Bell and Mr. Clarke. And the results of these measurements I have charted.

I will take the case of a gentleman 84 years old, though I did not advise him to use the vibrometer nor did I discourage his trying it. He used it a short time beginning January 15th. At that time the audiometer reading was one centimeter; the 20th of January the audiometer reading was 2 centimeters; the 23d it was still 2. About that time he took a severe cold, and his hearing dropped. The 25th of January the record was above 1 centimeter. He could barely hear. He resumed the practice, and a day or so later it ran up to 2½ centimeters. And then he took another cold, and down dropped his hearing again. Then we had long spell of delightful weather; he took his "medicine" every day, and worked right along, and his hearing improved until the experiment terminated on the 15th of February. He could then hear at the distance of 3½ centimeters.

Another case was still more defined. This was a young man who had been in Mr. Gillespie's aural class, but after he came to College his hearing deteriorated. He took the exercise on the vibrometer; and I took the audiometer measurements. First it went up, then he took a cold and it went down; then it went up, then was stationary, and then up, and down again. This was at a time when he was working very hard. Then we

had fine weather. and he kept up the exercise, and his hearing improved. Then it dropped a little; and then improved again, the final record indicating considerable improvement in one ear and very slight gain in the other.

[A Voice: Hearing by the audiometer; how about the hearing as tested by the voice?]

[Dr. Gordon: The hearing for the voice became better from time to time; but we cannot always tell from the audiometer. I may say that when this young man began he was not able to hear the ticking of the clock in his room. Afterward he heard his clock constantly. In another case, a young man came to me one day in a state of excitement, and said that at four o'clock he was out on the common, and felt a shock in his ears. This came four times. He happened to look at the tower-clock and it was four o'clock! At five o'clock he felt or heard it strike five times, and ever since that he has been getting a little enjoyment from noticing the strokes of the tower-clock.]

I should like very much to have spoken of improvement in hearing in cases originally, apparently, beyond hope, through patient and persistent drill with the human voice as practiced by Mr. Gillespie, of Nebraska, for the last ten years or more. The following statement shows what has been accomplished in one school in Germany within the last year under Dr. Urbantschitsch. There were sixty cases in all. When he began there were six of them who could hear words; 22, vowels only, and 33, were totally deaf. This was last October. In April, 12 could hear sentences; 16, words; 21, vowels, and 11, were not improved. The method of treatment is precisely that originated and practiced by Mr. Gillespie, and still followed by his assistants, Mr. and Mrs. Taylor.

Before I leave the floor, I will take this opportunity to communicate to the profession, through this Association, the action of the American Otological Association at its recent meeting held in Washington, a resolution presented by Dr. Blake of Boston, and discussed by Dr. Blake, Dr. Knapp of New York, Dr. Randall of Philadelphia, and by a number of other prominent otologists:—

"Resolved, That it is the sense of this Association that at each institution for the deaf, there should be an experienced aurist to make careful examinations of the condition of the ears of the pupils."

Dr. Blake's motion was seconded and unanimously adopted.

The discussion was brought on by the presentation of copies of very interesting examinations made by Dr. Bliss in the Philadelphia Institution. The report is a wonderfully complete one.

And when the Association of Aurists recommended that every school or institution for the deaf and dumb should have on its staff a competent specialist to examine the organs of hearing and speech, they really meant that they should have on their staff such a man as Dr. Bliss with full power to act. (Applause.)

LECTURE II.

Let me call your attention, in the first place, and briefly, to a lesson from one of the most fruitful branches of science, that of psychophysics, which is based upon the study of the anatomy and physiology of the human organs, connected with the development of mind. If there is anything that should be interesting to us, it is the question of mind-building, for mind-building is very closely related to brain-building which in turn is dependent upon the right exercise of brain functions. It is the habit now-a-days in speaking of articulation teaching, to base its importance, chiefly on the utility of speech and lip-reading,—a very important use,—as a means of communication. But I think that there is a greater utility underlying it. I do not wish to be understood for a moment as undervaluing speech and lip-reading as a means of communication; but if lip-reading were much worse than it is; even if the speech were a great deal worse than it is, I hold it is so important to the cultivation of the structure of the brain itself, and the development of the mind itself, that for these ends alone it would be worth while to spend all the time and effort spent upon articulation teaching. (Applause.)

Professor Merrill Gates has been engaged for the last fifteen years in original researches in psychophysics. His experiments have not been confined to the human brain, but he has experimented upon the brains of animals, and his experiments have been very instructive. For instance, as related by him in a recent lecture, he has experimented upon young puppies. He took three puppies of the same litter. Number One was permitted to *lead the* normal life of a young dog; Number Two had his eyes

completely bandaged and lived in absolute darkness. Number Three was allowed all the privileges good for puppies, and in addition much time was given to the training of its sense of sight. The animal thus trained could distinguish many different shades of color, not recognized by dogs usually. After some months the three dogs were killed and examined. The parts of the brain which had to do with the function of sight were wholly undeveloped in the puppy that had been blinded. In the educated puppy they were twenty-five times better developed than in the ordinary dog, being almost equal to the same portions of the human brain. The developed portions of the brain-substance were more dense, supplied by more blood-vessels, had more cells, and more highly developed cells, than the corresponding structure of the normal dog. Like results were obtained with other animals. Similar experiments upon the ears led to similar results upon the hearing-centers in the brain. In the course of these experiments, he found that wherever any physical link for transmitting impressions was restrained or disused, be it what it might, there was a corresponding lack of development in the brain. Now therein lies an important lesson for us. If our deaf children are not taught to speak, and to use all the organs of speech as normal children do, there are many cells and nerves not properly used. And if we had the scientific eye, we could see in the atrophied brain of such children the effect of the lack of symmetrical or normal development.

To return to my subject.

I wish to make a few observations upon articulation teaching in the College. The Congress of the United States, in 1891, by a special appropriation for the purpose of affording instruction to the students of the National College, enabled the authorities of the Institution to take a step long contemplated; and the continued liberality of the Government has made it possible to keep up the Department of Articulation to the present day. Some may think we have been a little slow at Washington, but you must remember that we live quite far South; and though we move slowly, I have no doubt that we move surely, and we hope not to make any serious mistakes. We shall try to keep somewhere in the procession.

In the prosecution of the work of this department, a persistent effort has been made by brief special lessons given daily,

to preserve and improve the speech of all the students in the College who came to us with these powers, and we have also carried to the point of success an experiment of which I shall speak at length later on.

At Chicago, last summer, all persons specially interested in our work had, in lieu of a "living exhibit," an opportunity to examine the records of the ordinary practice in lip-reading from the lips of the teachers by every student in the College for an entire term, as recorded by the lip-readers themselves.

I may say that the first two terms of each year in this Department, are occupied mainly in instruction and drill and practice in articulation, in speech, with incidental lip-reading. The third term the emphasis is thrown upon lip-reading, and for various reasons I find it desirable to insist upon their recording nearly everything that they read during the short time allotted to this exercise. That enables us to have a record of lip-reading actually performed by each student under the instructors of this Department for a single term in the year.

I have spoken of "lip-reading." And I may say that I used to be something of a reformer; and held very strongly to "speech-reading" as the proper and most expressive term, coming nearest to the idea we wish to convey. But I am inclined to abandon that term, for the newspapers gave accounts of how we were teaching deaf-mutes to speak, and said we made orators of them; that they became great "speech-readers." And in general I think it is a hazardous experiment to undertake to force new meanings into old words; and as lip-reading has the authority of the dictionaries, I think we are safe in using "lip-reading" as more likely to be generally understood.

To give some idea of the lip-reading by different students, I take great pleasure in submitting these "echoes" from the classrooms in the form of books, containing the entire record of lip-reading in the College for the term just closed. I may say that each "book" contains the record of lip-reading of various persons with the personal history of each case.

Perhaps this would be a good time to introduce another matter. I may say that among semi-mutes, the greatest difficulty that I have found in the lip-reading and speech, arises largely from their imperfect knowledge of phonetics, of the mechanism of speech. I agree thoroughly with everything said in *Mrs.* Bell's paper; but at the same time I think that if one is

to become a fair musician, and he has not a great genius for music, the more scale-practice you give him the better, in the end. And I have not been able to find any better method of drill than the method based upon that admirable analysis of speech given in "Visible Speech."

I have made a study of as many cases of proficiency in lip-reading by semi-mutes, as possible; I know many of them personally; I have corresponded with many, and I find in general that semi-mutes, no matter how well they speak, are not very familiar with any form of phonetic analysis. Systematic drill in phonetic analysis tends to help the eye, to fix the skeleton forms of words, and to fix forever their pronunciation as well as appearance. My own best results have been obtained (and I refer to work done years ago, for I am not engaged in the practice of this art now), by drill, first, on a limited number of elements, reading them from the lips, speaking them as uttered, and also writing them in definite and plain symbols. I have here with me a simple outline of the drill which I used in 1870, I think, and in 1871 and 1872, with excellent results.

I will not stop to give you that now. In the first series it was confined to exercises upon lip-reading,—all the permutations of "p," "t," or "b," "t," "v." After they were mastered, I permitted my scholars to advance to the second series. This series gave us the largest rounded mouth-opening vowel in "ah," and the tiny rounded opening in "oo," and the broadening of the lips in the very visible long "e," "ah," "oo." These any one but a blind man can read; the idea was to select those elements most visible and most differentiated, and we practiced the permutations upon this series. Then we combined the first series with the second, and then we passed to the third series,—"th" "l," "aw" (ʃ), and then, after my class had mastered these, I passed backwards again and combined them with the other series, and so on.

Then we had a syllabic drill; I preferred to take a single vowel and begin with a consonant, and then to take another set of exercises beginning with a vowel and ending with a consonant. Then for another exercise, the same syllables were to be repeated, as mamma, lala, duhduh, buhbuh. Then we advanced to one consonant between two like vowels. Then one consonant between two different vowels. And then we advanced to two syllables. Here we took different consonants

with the same vowels, and *vice-versa*, and then advanced to two syllables in which all the elements were different.

And about this time I introduced some simple, easily visible words used by many teachers successfully.

[Here the speaker gave quite an extensive list.]

Then I felt I was ready to begin simple narrative, and I was always anxious to find whether the pupil had committed anything to memory, rhymes or jingles, names of the States,—no matter what, and I would try to get them to repeat them from my lips. If they had forgotten half, so much the better for the lip-reading,—knowing the general run of the thing, and not the precise words. They would seemingly make considerable progress, with such verbal exercises; in reality, the progress was not great, but it encouraged them very much. Thus we proceeded from the known to the unknown, every once in a while working in these phonetic drills or rather lip-reading drills in review.

I will digress once more to say that there is a lady present, from New York City, Miss Keeler, who has had a number of adult pupils sent to her who had speech, but not lip-reading. Rev. Dr. Gallaudet, knowing her work, has recommended her in a number of cases, and many adults have taken lessons of her. She has a system which is probably a great deal better than mine,—though any method is better than none, and therefore I praise my own. But hers is the result of a great deal of study. She has not only worked out a general scheme, but the exact exercises which she will use from lesson to lesson, from day to day, so that not a moment is lost in thinking of what she shall say to her pupils. She can go through with such exercises with great ease and rapidity, and I hope the opportunity may be afforded her to give us a precise account of her method. It may eventually be published, so that all may have the benefit of the exercises.

I may say that I used my series of exercises with one of my normal classes, and endeavored to have it used with some classes in the college; but there was considerable friction. A great many students did not exactly see the necessity of anything so dry, and promising so little immediate result; they could talk very well without that. And it did not seem advisable to insist upon their following a dry routine where they did not fully comprehend what the outcome might be, and where it might not meet my own expectations. But in the case of my own pupils

in years gone by the results were very happy indeed. It was designed to meet the needs of intelligent students, who would persevere in practice. Secondarily the exercises cultivated the voice, and improved the distinctness of speech.

Among these exercises, I have two volumes made up of the lip-reading for the term which just closed, by grown-up pupils, beginners who came to us unable to utter the simplest sentence. That is, the adult-beginners in speech,—41 in all,—of whom 14 were between 18 and 21 years of age; and 27 were between 21 and 28 years of age; 33 were men, and 8 were women. Of these, 15 were born deaf, or became deaf in early childhood; 7, at one year; 8, at 2 years; 5, at 3 years; and 6, at 5 years; making 41 in all. One of these adults came from New England; 13 from the Middle States; 8 from the Southern States; 18 from the Western States, and 1 from Canada. The first year there were 28 beginners, the second year 8, and the third year 5.

I meant to say somewhere that this experiment was an unique one. This experiment of teaching these grown-up deaf-mutes to speak and read the lips is without recorded parallel in the history of deaf-mute instruction. I have not been able to find a record of anything like it in the whole history of our work. So it possesses that one interest, if no other.

Now of these 41, 8 left college, 6 dropped articulation at their own earnest request, and 18 are still under instruction. And the records I have with me are the records of these 18.

I may say that a peculiarity which was noticed in regard to these 41 adult beginners in speech is that their lung capacity is "short." And it is an interesting fact, for though it may not have a direct bearing upon their speech, it may have an important bearing upon methods, means and appliances in education. The average lung capacity of the males is 243 cubic inches. That compares favorably with the average of the public at large where a large number of persons is taken into account. But it is ten cubic inches less than that of a university class, and 88 cubic inches less than that of the same number of university men of the same height, presumably devoting the same attention to athletic exercises. A remarkable difference. Eighty-eight cubic inches in young men devoted to athletic pursuits. The breathing habits are defective. They should have been carefully trained in their childhood.

The laryngeal development in a number of cases was incomplete. I regret that the notes of the laryngoscope examinations have been mislaid, so that I cannot use them. The speech acquired is generally slow and labored; the voices are usually weak, but with few exceptions not at all unpleasant. Every hour one spends in a crowded city, you will hear voices that are unpleasant, and many voices as difficult to understand. The intelligibility of the speech varies considerably. In certain cases, on certain occasions, where the speakers were embarrassed or fatigued, the speech was unintelligible, as a whole to me. The teachers did not seem to have difficulty in understanding them, but the speech was not intelligible to me, although I think I have always been able to understand some words in every sentence. I am inclined to think, however, that every case would pass muster according to the sensible dictum laid down by Dr. Williams, of Hartford; "Any pupil who has mastered speech and lip-reading so far as to be able to carry on conversation in regard to the ordinary affairs of life in speech so plain as to be readily understood by persons of his own family, even though others fail to understand him, should be accounted as a successful articulator and lip-reader." (Applause.)

The degree of proficiency attained is such that with a fixed determination to use speech, it would be possible for at least 30 of the whole number to depend upon it. There were 41 cases in all. Eight dropped out after one year. Of the remainder, 30 of them, I think, could make use of speech freely with their immediate friends, and 20 could use speech if they so chose in all the ordinary business of life.

The devotion, skill and enthusiasm in teaching shown by Miss Gordon, our senior teacher, and Miss Fish, who has had charge of nearly all of this section, and to whom the development of speech is due, have been met by unusual difficulties. It should not be forgotten, that the mere age of the student was not the chief barrier in the way of success; in many cases there was so complete a degree of satisfaction with their fixed habits of communication that but a languid, temporary, or perfunctory interest, could be aroused. In a few cases there was a positive prejudice, which it was exceedingly difficult, if not impossible to overcome. There was too little time available for the best results. Our College program is almost as crowded as Chautauqua's.

[A Voice: How much time have the students had in their speech-work?]

[Dr. Gordon: These beginners are arranged as nearly as possible in small classes, not exceeding six in a class, and the time devoted for a single exercise is half an hour, and the individual instruction never exceeds fifteen minutes at the most. The results are remarkable when everything is considered. In all cases there is too little time for the best results. Then, too, if a working system is employed at all, the students in speech need the stimulus of recorded work. In the speaker's opinion the work in articulation should be included hereafter in the regular curriculum of the College. I think perhaps the time has not come yet, but I think it is approaching when so many will come to us with speech and lip-reading already acquired that it will be well just to take it as a matter of course, that they should go right on with their constant usage of speech and lip-reading.]

In conclusion, I may say that it is exceedingly difficult to form the "speech-habit" in adult life; and for this reason it is better for the pupils to begin when they are young. The intelligence, and knowledge of language, which these grown-up beginners brought to bear upon their work enabled them to accomplish as much in speech in one year as might be expected of young children in two or even three years. But this great advantage does not balance the influence of the acquired and inveterate habit of silent methods and the complete degree of satisfaction with these methods of communication, nor is it possible to secure in adult life the full development of the sound-producing organs. It should be borne in mind that every one of these forty-one adults came to the College dumb, from schools in which an effort was made to teach all promising pupils speech and lip-reading. Practically they were all rejected cases without trial or with little trial, with the exception of one young woman who had had five years of instruction in the early part of her course, and was then dropped as an unpromising subject.

I am, from my own observation, convinced that every one of them was a suitable subject for oral instruction.

The final lesson is this:—

Let us not be too easily discouraged with unpromising cases. I cannot do better in closing than to refer to one of

these: Among the beginners in the first year the most discouraging was that of a man born deaf, 21 years of age, without a vestige of hearing. An observer wrote of him as follows: "After three weeks of instruction, Z——— is a problem. He has very little power of imitation, and still less of memory, and, to make matters worse, he is very slow to understand what you mean. His lack of memory of positions, probably, has the most effect, for even when he gets an element right, he cannot remember the position in order to repeat it. His improvement is almost imperceptible." Three weeks later the observer says: "Z——— has made considerable progress. The sentence I gave to him was given back to me, and repeated very well."

A week later: "Z——— has improved considerably, but it is slowly, step by step." At the June examinations at the close of his first year, this unpromising student read from his teacher's lips 695 words with 9 failures, and spoke 688 words with 46 failures.

Now I know as little about what he has read from the lips as you do. I see here he has the names of all the faculty. That was February 1st. These are the daily lessons, you understand.

March 12, he records: "It is a beautiful day. I met a pretty girl. Did you go to the market? Prof. Porter went to see it. Did you see Miss Taylor? She returned to Philadelphia yesterday. She will go to Portland, Maine, next week. Prof. Porter is much better. He will come down."

April 16: "When did you hear from home? What day of the month is this? What month is this?"

May 7: "How did you enjoy the ball? Please tell me about it. I came home at 12 o'clock."

This is lip-reading from this unpromising student; he is not a good lip-reader, and would not be pronounced a promising case, but he has accomplished a good deal under the circumstances.

I will turn to Miss Kershner's case. It is an interesting one. She has a number of deaf-mute relatives, and was born deaf. She entered the Philadelphia school, and attended it nine years. She entered the College in 1892 and began then to learn to speak and to read the lips.

[Reading records from January 19 to May 25.]

[Dr. Bell: How are these records made?]

[Dr. Gordon: The teacher sits before the class, talks to the class, tells stories, and asks questions. They sit with their little books open and write, and are expected to speak all that the teacher says. I prefer that they should both speak and write what they see upon the lips. It is a record of their lip-reading. In some cases they have not given every word, or have made mistakes which have been underscored. They are not always required to get the word the first time, but their time is limited. Some words might have been repeated two or three times. It is taken from the lips. "Do you think it is very cold for the first day of summer?" (Reading June First.) That was read in one exercise from the teacher's lips in Miss Kershner's second year.]

[A voice: Sentence by sentence?]

[Dr. Gordon: Generally sentence by sentence, sometimes word by word, and sometimes right ahead. Of course this could not have been given right off.]

[June 8. Reading from the MSS.]

This is from Emma Kershner's exercises. If time permitted I should like to run over some other lip-reading by some who have had more practice and knowledge of speech than she.

[Dr. Bell: I understand that these you have read are——?]

[Dr. Gordon: Grown-up deaf-mutes without previous instruction in speech and lip-reading.]

Let me call your attention to something I failed to present yesterday. I had the promise from Dr. Lucien Howe of Buffalo of a collection of ear-bones. But he disappointed me, and sent me photographs instead. I suppose he knew the reputation of Chautauqua, and was afraid to trust those valuables on these grounds. Here are photographs of the ear-bones of man, the whale, the elephant, etc., which you can examine at your leisure, and return to me if you please. I am obliged to you. (Applause).

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MANUAL ALPHABETS IN AN ORAL SCHOOL

BY

MISS HARRIET E. HAMILTON,

AND

THE IMPORTANCE OF KINDERGARTEN METHODS IN THE TEACHING OF THE DEAF

BY

MISS BERTHA H. GAULT.

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MANUAL ALPHABETS IN AN ORAL SCHOOL

BY

MISS HARRIET E. HAMILTON.

MANUAL ALPHABETS IN AN ORAL SCHOOL.

A piece of litmus paper is in chemistry considered a satisfactory means of determining whether or not a given solution is acid or alkaline. Unfortunately there is no recognized test that may determine the name by which any method of instructing the deaf should be designated. The man or woman who could introduce into our nomenclature a universally accepted definiteness of terms would be indeed a benefactor, as a great deal of unprofitable discussion is now occasioned by misunderstanding terms. Among the terms which the profession are not unanimous in defining is the word *oral* as applied to a school for the deaf. There are undoubtedly many present who would be dissatisfied with a definition which would make the instruction in an oral school dependent in any wise upon a manual alphabet. To these the title of this paper is necessarily a paradox. Because if we assume that an oral school is to be characterized by having its instruction given wholly through or by means of speech supplemented by the printed page, then it is apparent that the very instant a manual is allowed to become a part of the schoolroom method the word *oral* must be dropped.

No hint or suggestion regarding the manner of treating this subject having been given by the Committee, a very large scope is left for the exercise of discretion. It will, however, be taken for granted that the questions which the Committee wish to have considered are these: In what manner and to what extent may manual alphabets, orthographic or phonetic, advantageously become a part of a system of instruction for the deaf, whose ultimate end is to give to the pupil a high degree of mental development and at the same time the attainment of the art of speech-reading and the power of speech.

Although the exact counterpart of the system which I shall unfold may not exist, the larger part of the method submitted is founded upon facts which have stood the crucial test of years of experimental use at the Rochester School, and the rest are

believed to be reasonable deductions from facts already well established.

The school life of a deaf child so far as speech is concerned may be broadly divided into two periods, the length of either one of these depending largely upon the child's natural ability, and aptness for the acquisition of speech. The first period may be called the kindergarten, or infantile period,—the period of involution,—during which the child is being prepared and trained for the use of spoken language. The second may be variously designated, but perhaps may most suggestively be called the spoken language, or speech period,—the period of evolution.

Before entering school the little deaf child has vaguely realized the pitiful fact that he is a separate factor in the family life, not a component part of the home circle as are his hearing brothers and sisters, who, with the other members of the family, have a medium of fluent communication with which he is not conversant,—and he dimly realizes the lack of comradeship. Joys and sorrows which are shared by the others, he ponders with questioning eyes, little comprehending their causes.

However, on entering school, the child finds himself surrounded by playmates, care-takers, and teachers who communicate with one another as do the friends at home, but, to his surprise, he finds that unlike the home friends, these have a peculiar means of exchanging thought by a significant play of the fingers. Interest is thoroughly aroused when it dawns upon him that there is a graphic means of communicating with his fellows. The manual alphabet is thus presented at the time when thought is awakening and there is need for its expression. As he receives language only through sight, and as the manual presents it in a more readily discernable form than when spoken, the child is taught simple sentences first through manual spelling, and after he understands their meaning he is taught to read them on the lips. Before many days have elapsed he gains a small manual vocabulary which is the beginning of the grand transformation that is to make him a social being, consciously receiving and imparting ideas,—aware of his birthright as a child of God and a brother of man. In acquiring this vocabulary he does not experience the laborious process of learning letters, combining letters to form words, and combining words to form sentences; but is taught from the very first to *give the* "unit of thought" upon the hand without special atten-

tion to the number or form of the manual positions. Constant practice in finger spelling disciplines the eye, sharpens the perceptions, and concentrates the attention; and the manual is equally valuable in cultivating the imitative faculties. So readily can idiomatic forms of English be expressed by manual spelling, so easily is this means of communication mastered by a child of ordinary capacity, and so adequately does it enable him to express himself that his face soon becomes radiant with the light of awakened thought. With the expanding of conscious intelligence, life becomes full of interest as the child realizes that the finger play is orthographic,—corresponding to the printed page. And because the form of spelling is orthographic he readily learns to express with pencil the thoughts which he spells, and ere long is able to send the first letter to father or mother. Imagination pictures the joy of his parents on receiving this first communication, and self-respect is nourished by the consciousness of newly acquired power. The eagerly expected letter that comes in reply to this first epistolary effort imparts an added zeal to the child in his school work.

During this period fully one-half the time in school is spent in the training of powers of observation and perception, and in exercises in speech-reading and speech. As observation must be somewhat active before the imitative faculties can be aroused, speech-reading exercises precede those for the teaching of speech. Not until there is a voluntary effort on the part of the child to imitate the movements of the teacher's lips does she try to induce the child to speak. The little one is unconsciously led to want to speak before there is any attempt to teach him to do so.

With the quickening of the observant and imitative faculties begins in earnest his systematic training for life, since "he is not to lead an isolated life, but must take his place among his fellows, to work as one force among many forces." Should it be conceded that he is under educational conditions most favorable for "all round development," it will be apparent that the requirements of the case are not met unless the methods of instruction reveal to him the mysteries of the significant movements of the lips which he observes all about him. The object of the teacher is therefore

1st. To arouse and develope thought—"clear, strong, thinking, reasoning mind."

2nd. To give the child the media through which thought may be expressed.

3rd. To give him assurance that the advancement he is making day by day in speech-reading and speech is putting him in touch with the world of hearing people and fitting him for the "retirement of dependent love" which makes home the "rallying place of the affections"—the heart's repose.

Edward Everett Hale somewhere says that "the great idea of the present century is the togetherness of the human race." Is it strange then that the measure of the child's happiness is full when he returns to his parents for the first time and perceives their joy as he greets them with unsealed lips, for no other utterances are so musical to the parent's ear as are the first words of the deaf child,—"Papa, I love you." "I am not dumb." This is a crisis in the child's life. The parents' joy over these first spoken words is an inspiration which carries with it the assurance of success. Nor is there any experience in his history which shapes future efforts more positively than does this first home going.

He discovers that the games carried on through speech and speech-reading which were found so attractive at school have not only given him to his home, but they have given his home to him; since he is able to speak so as to be understood and to understand much that is transpiring about him. This first vacation is a step out of organized play into a life of active helpfulness. While his hearing brothers and sisters do their mother's bidding his eyes watch her lips most eagerly, and his willing feet obey her behests most promptly. Children who have not been separated from their parents may sometimes weary of homely acts of service, but our little deaf boy who is fond of saying while at school, "I help my mother when I am at home," is now happy in demonstrating the truth of this assertion.

It is said "Nature has been the great teacher of the world, and the question has been and still is how to bring her into the schools of men." If we assume that the teacher succeeds in her efforts to reach the heart of Nature and is guided by her in dealing with the little one, it necessarily follows that the child under consideration is taught speech-reading and speech scientifically. As the spelled language conveys from the start a complete thought, so the spoken language is from the outset made up of simple sentences which express the child's wants or the

thought that he desires to make known at the time. It is not expected that the spoken language will keep pace with the ability to express thought by means of finger-spelling. When the pupil is not busy with speech work he is with teachers who conduct their exercises through manual spelling or writing. Not less than half the time, however, is spent with those whose constant effort it is to confirm or create confidence in his ability to speak and to understand speech.

As the mother accepts every endeavor of the young hearing child to speak, so the teacher encourages every effort of the little deaf learner, and so far as possible grasps the thought and responds to it, no matter how faulty the utterance may be. Not until the child gains some confidence in himself does the teacher correct his speech. Early endeavors, though they lack in precision do not lack in continuity, and the teacher perceives that it will be an easier task for her to correct imperfect speech when once the child has the desire and conscious ability to give vocal utterance to his thought than it will be to get the ready flow of speech if the thought is first directed toward isolated elements. She devises a game by means of which the child, unconsciously to himself, acquires the ability to form all the elements of speech, and in due time she reveals to him the meaning of the game and explains to him the power he already possesses of rendering his speech clear and exact. Ere the little one leaves the kindergarten he learns a phonetic manual through which he has a graphic representation of every utterance he can have occasion to make. This reveals the significance of the peculiar form of spelling which he has heretofore observed in the intercourse of the older pupils at the table, and he is made to realize that a self-corrective and reciprocally corrective power is literally placed in his hands.

Thus we find that the child at the close of the first or infantile period is in command of idiomatic English through orthographic spelling, able to read and enjoy books, capable of corresponding with absent friends,— even looking forward with pleasure to the day for home writing,— alert mentally and physically and full of interest in the phases of nature and all natural objects, wide awake to the events transpiring about him, in fact, "Something far better than a saint—an eager, intelligent child."

Thus equipped the lad enters the second stage, or the period of spoken language, which is the period of evolution. He feels this to be an important epoch in his career. He is no longer a

child in his own eyes. The teacher desiring to take advantage of this attitude of the youth's mind toward himself and to turn it to the best account assures him that he will soon be able to recite lessons orally and to carry on conversation with hearing people through speech-reading and speech. Henceforth she keeps ever before his mind this paramount aim and purpose, that he is to become an English speaking man. With this in view all his school work is planned. Nothing new in speech forms needs to be presented, as he has acquired all the elements and been drilled upon combinations while in the kindergarten. Possessing ability to speak and having before him much of the time the visible forms of vocal utterance either upon the lips or upon the hand, he gradually inclines to speak more and more, because this emphasizes to others as well as to himself the fact that he is no longer a kindergartner, but a member of the advance department. The pronunciation of unfamiliar words is easily conveyed to him through the phonetic manual, as this represents the elements of speech which he has already mastered. Moreover, the blending of speech elements is suggested to the eye by the transition from one manual position to another. Although text-books are now placed in his hands, but little time is required to teach the pronunciation of new words that may occur in lessons from day to day, as the phonetic positions upon the hand clearly present the correct pronunciation to the eye.

In due time our young student is promoted into the grammar grade, where part of his exercises are conducted through speech-reading and speech, and though a manual is used in certain classrooms, the teacher invariably calls upon the members of the class in turn to speak all that is spelled. In fact this is the case whenever there are general exercises which render it advisable that the medium of intercourse should be rapid and exact. The manual alphabet is used at morning prayers, in chapel, and in prayer meeting, and one or more voices follow all that is spelled. When the Lord's Prayer or a familiar psalm or a favorite hymn is spelled a full chorus of voices keeps pace with the nimble play of the fingers of the leader.

Time tries the troth in everything. What takes place after the pupil leaves school, what merited success and esteem he may win when drawn into competition with the hearing for honor, position, or a livelihood, must ultimately determine the practical worth of any system of instruction. So, here, though our student

mayhap greatly to the regret of his teacher, is enticed or com- to leave school before he has finished the High Class, we must follow him beyond the pale and influence of the institution if we would judge of the institution's methods. We have watched the little congenitally deaf child awaken and grow under the expanding influence of the kindergarten; we have seen the eager lad enter the grammar department; and finally the time comes to bid God speed to an intelligent thinking young man, well equipped with the ability to read the lips and to speak. If we assume that even before leaving school his efficient vacation work upon the paper published in his native place has elicited an invitation to occupy the editor's chair, and if in forecasting the future we see him thrilled with pride to be generally regarded as a semi-mute or mistaken for a hearing person, or behold him as the years go on successful in business affairs, having a high reputation among bankers and lawyers, who consider him the ablest business man in town, and futhermore if we find him generously devoting his hard earned leisure moments to literary work, and with his deaf wife pursuing a post graduate course of study in connection with the Chautauqua Literary and Scientific Circle, we shall be assuming and forecasting nothing more or different from what is found in the history of the outside and after life of one who has gone from a school for the deaf, which in a practical way may be regarded as illustrating the value of Manual Alphabets in an Oral School.

THE IMPORTANCE OF KINDERGARTEN METHODS IN THE TEACHING OF THE DEAF

BY

MISS BERTHA H. GAULT.

THE IMPORTANCE OF KINDERGARTEN METHODS IN THE TEACHING OF THE DEAF.

The Kindergarten holds, in education, the relation of the fundamental, in a two-fold sense. Not alone from its position, at the beginning of the child's course of training, must it be thus regarded, but also, as in thought and principle applied, it forms the basis of a new educational system, as yet dimly seen in larger outline.

We are all aware of the change that is taking place in educational thought. It comes to us reflected in figures of speech, which no longer represent the child as the vessel to be filled, —the sheet of paper,—a blank on which the educator may write what he will, but now the comparison is suggested by Nature, and we hear it said, "The child is like the plant, that *grows* by an inherent law, assimilating all that is received and transforming it into the bud and flower and fruit of its unfolding life."

Education was formerly regarded as an inleading process; the sole office of teaching instruction; while the far-off end was held to be realized in the production of the revered man of learning. But the failure of knowledge to prove itself power, has led to broader views and deeper thought, in which, consideration has not been restricted to the realms of learning, but, what is most important, has been directed to the child himself.

The study of child-nature is the characteristic of the education of the present.

Never before has the child been regarded with the sacredness in which he is held to-day. Indeed we are coming near the conception of a book of old, as we behold in the child the divine image and recognize his destiny to be dominion.

It becomes then the office of education to provide suitable conditions for the unfolding of this nature and the attainment of this power.

The Kindergarten, in name, suggests a place for natural development. It speaks of life and growth. It would make good

the saying, "Life is school," by proving its converse and presenting school as life.

It therefore rejects the idea that the child is best prepared for living, by relegating him to a region of dead facts and lifeless forms and symbols.

The Kindergarten receives the child all aglow in newness of life, full of vitality, overflowing with abundant energies and possessing an unquenchable thirst for knowledge. And what more favorable conditions could be conceived, than desire to know, coupled with eager energies to bring the satisfaction. All this the Kindergarten recognizes and would foster with tenderest care. It therefore assumes a passive, or following attitude, makes the child its study, and seeks in the laws of his nature for its rules and formulas.

The child finds interest in all of life about him. He cares not for the dried and skeletonized specimens which we collect and offer to him. He wishes to make his own explorations and discoveries. He would see with his own eyes and know by actual touch and personal investigation. Ushered into an unknown world he is allured by invitations on every hand. The senses form the avenues by which the outer world is to reach the mind within. The Kindergarten then seeks to furnish guidance and direction to the child in acquiring knowledge through the natural means of his sense organs.

He is taken out-of-doors and led to observe the growth of tree and flower. He studies the habits of birds and insects, and Nature gladly reveals her secrets to his opening mind.

The necessity of always presenting to the child the real object before the word, its symbol, can hold meaning for him, renders objective teaching the method of the Kindergarten. The aim is to present the real in every lesson. Only when this is impractical are artificial representations resorted to, while furthest removed and of least value are verbal descriptions.

An adapted illustration may serve to make this clear: Tell a child who has never seen wild animals a story about them; he may listen to you but with vague conceptions; show him pictures of the animals, and he will be able after a manner to describe them; but take him to the circus and he will be transformed into a veritable menagarie.

Not only does the child's nature require that he should become acquainted directly with the objects that surround him,

but that he should be allowed to view them as entities, and see them in their true relations and co-ordinations. His mind can as yet but grasp the unit. The relation of parts to whole he cannot perceive till at a later stage when he is prepared to make his own analysis.

Perhaps the Kindergarten principle that no object or fact should be presented as though it were isolated, has been most often disregarded.

Too many learners have experienced the unfortunate results of a system of instruction which failed in large part to recognize this principle of co-ordination, and were left with their knowledge in a chaotic jumble impossible to be retained for lack of the adhesive power of any connecting plan.

The child's knowledge should be presented to him from the first with a view to building up an organized system. The Kindergarten aims to lead the child in a progressive course, in which one subject grows from another by natural sequence. Every one is familiar with the child's play, yet comparatively few have sought to know its meaning. Recognized as the natural mode of the child's activity, it becomes the natural means of his education. Hence in the Kindergarten the child is taught through play.

The child, in his play, delights to mirror the life without him. The little boy keeps store like father, the little girl is mother with her family cares. In this we may observe the instinct for representation, whatever the child sees he wishes to reproduce by his own activity.

In crude drawings he outlines the objects about him and mimic roads and villages take form in the sandy beach.

Thus we may decipher Nature's formula, "For every impression made upon the mind there should be corresponding expression," and on this fundamental principle, the Kindergarten system of Gifts and Occupations is based. A lesson is given on the cube with attention directed to its faces, corners and edges. Afterward the child is supplied with a piece of shapeless clay in which his ideas are to take outward form. Not until he can reproduce the cube in clay is his knowledge considered complete.

He is thus learning by doing, every particle of knowledge is being converted into power.

The Kindergarten provides for the development of the child in his three-fold nature, the intellectual, the physical and the moral. The games of the Kindergarten have underlying them

laws of physical culture. All unconsciously in play the child is receiving the benefit of gymnastic exercises, which if prescribed as such would lose their value by becoming irksome.

In the moral realm, the Kindergarten stands pre-eminent. It apprehends the futility of all endeavor to develop the child's powers unless at the same time it directs those powers into channels of right living.

The moral training of the Kindergarten is free from all precepts and maxims.

The child is placed in a miniature world, in which the moral nature may grow and unfold in the sunlight of all pervasive love. It is a social world, including in elementary form the social phases of the great world without. The child here finds himself a member of society and learns his relations to others. He perceives the value of co-operation when, by each child contributing his house of blocks, the city is built. In work and play he is taught to respect the rights of others and to yield personal preferences in loving self-forgetfulness.

Thus the Kindergarten aims at complete development. It would lead to self-reliance, freedom, power, and would open the way to fulfillment of highest destiny. And do not these words speak of fuller emancipation for the deaf?

If the founder of the Kindergarten conceived that education for the hearing child should begin with the first dawning of infant consciousness, while the child is a baby in his mother's arms, and be continued in ever widening circles, in the home, the Kindergarten and the school, till he reaches manhood and is a pupil in the great world, why should the deaf child be placed at further disadvantage with the hearing, by allowing his mind to remain unattended for years, until the physical has outgrown the mental, and harmonious relation between mind and body no longer exists.

Then the teacher who comes to him finds instead of that "flesh which now helps soul" a sensual barrier, which must be penetrated to reach the mind within. It seems incredible that until within a few years it was thought inadvisable to receive deaf children into school under twelve years of age. Happily that day is past in the state of New York and children are now regularly appointed at the age of five.

It must, however, be borne in mind that the deaf child of five who has never been to school is in mental development like

the babe newly born whose mind still slumbers in darkness.

Language is the light that comes like the word in the beginning, scattering the darkness and revealing a new world.

The Kindergarten for the deaf begins at an earlier stage than that for the hearing and must largely include the mother's part of the child's education. Hence it seeks for nature's guidance by watching the mother at play with her child.

"Mamma loves baby," the mother says, and the tiny arms are outstretched. "Does baby love mamma?" "Does baby love papa?" and, hiding her face, "Where is mamma?"

It is thus in the natural mother play that the Kindergarten finds its earliest methods.

The acquisition of language, the problem in teaching the deaf, must form a distinctive feature in the Kindergarten. And in accordance with its principles, language and speech are developed as a natural growth proceeding from the inner necessity of the child's nature.

Awaken thought and interest, and the child will welcome language as a longed-for interpreter. Indeed we have abundant proof that acquirement of language need not be limited because of deafness.

Do we not need to raise our standards ever higher lest we feel the influence of the prevalent opinion often shared by the child himself, that his life must necessarily be circumscribed.

May not some of us who are only entering the work and feel unduly the superior advantage of ability to hear, be relieved of our conceit by the fancy of the ingenious writer of romance, who represents the inhabitants of some distant sphere as possessing a thousand senses, and ever feeling a vague longing, certain that somewhere there must exist more perfectly formed beings than themselves.

We possess but five senses, or at most six, yet we find them sufficient for all present need. Indeed we are aware that in none of these lines do we exhaust our possible resources. Shall it then seem irreparable loss if one sense be lacking?

Rather let our sympathy transform itself into active energy in bringing the remaining senses to that fuller service which shall give completeness of life through the kindly rule of compensation.

Truly we are beginning to conceive the limitless possibilities in education; within lie waiting dormant powers; without is an inviting world and ours is the privilege to throw open the portals of life and destiny.

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THE DISADVANTAGES OF PRIVATE INSTRUCTION

BY

MR. J. D. WRIGHT,

AND

WORDS AND LANGUAGE

BY

DR. T. A. HUMASON.

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THE DISADVANTAGES OF PRIVATE INSTRUCTION

BY

MR. J. D. WRIGHT.

THE DISADVANTAGES OF PRIVATE INSTRUCTION.

I was aware when I chose this subject that there is a popular prejudice in favor of private instruction in the home, and I was forcibly reminded of this fact by a lady teacher in a large school who told me that she thought that the title of my paper as it appeared on the programme was a mistake of the printer's.

Most of us here are teachers in large schools and I presume we have all sometimes felt, when we were striving to retain the attention and interest of fourteen active little people, that private instruction was the ideal way to educate a deaf child, and have thought, "Oh! What could I not do if I had any one of them alone! If, however, we give the matter a few moments consideration I think we shall find enough disadvantages in private home instruction to justify the opinion that, from the standpoint of the child's highest welfare, it is not the best possible method of education.

I remember once seeing the statement by a gentleman interested in the education of the deaf that "the best deaf-mute school is the school of one pupil." Dr. Fay in his article presented as a portion of Dr. Bell's evidence before the Royal Commission in England, quotes this remark and adds that "it is not to be received without some qualification." The qualification that he makes is to limit the time of private instruction at home to the years between three and ten, after which the child should be sent to school. I would carry Dr. Fay's modification still farther, in case the right kind of school can be found, and end the private instruction at home and alone not later than seven, and better yet, at five years of age.

In all I say I am speaking on the basis of the best school instruction and the best private instruction attainable, and I am comparing the relative *possibilities* and the inherent weaknesses of each. Any comparison which I may have occasion to make of the differing characteristics of children educated in schools and by private instructors are not based wholly upon theory but upon personal observation in my own experience which has been somewhat intimate with those of both classes.

The principal advantages which are attributed to private instruction are the large amount of individual attention which it permits and the protection from evil associations. Neither of these belong exclusively to it. Under favorable circumstances both can be obtained in school life. The situation of a deaf child does demand more individual attention than that of one who can hear, and the classes must be made small to meet this need; but it is not to the greatest advantage of the child to monopolize the attention of the teacher. It is not possible for him to be speaking and reciting all the time and there are many things which can be best learned in company, or by observing the teacher working with another, while the mistakes of others are also oftentimes instructive. Moreover there is a certain limit of strain in attention beyond which a child should never go and this limit lies within the individual attention possible in small classes.

There occur to me three reasons for the existing opinion in favor of private instruction. First, the unfavorable circumstances under which most existing schools labor. Second, the fact that only the best private pupils ever come to public notice. Third, and most important, a too narrow conception of the term *education.*

For the purposes of our discussion we can analyze education into its constituent parts of *development* and *instruction.* People are too apt in speaking of the relative advantages of methods to forget the former and think only of the latter. They say that they grant that the school possesses many advantages for developing character and social qualities, but for intellectual development and the acquisition of knowledge, private instruction is more effective. I do not agree with this at all. It is perfectly possible to so organize and manage a school that, in education in its narrowest sense of imparting information, it is more effective than private instruction. There are forces which make for this branch of education which can *only* be utilized in a school. The power of self-comparison with others and the knowledge which it brings the boy of his relative position. This results in an endeavor to attain the level of the best with whom he is associated, thus leading to a proper emulation. The shrewd old Jesuit educators used this force to great advantage. They had for their schools a Latin motto which, translated, reads, "Emulation, the whetstone of talent, the spur of industry." Companionship in study is a strong force. Two people can work together better than alone. They take greater interest in their work *and interest* is the digestive fluid of the mind which assimilates the

matter of study and makes it a portion of our being. The child in school comes in contact with more than one teacher's mind and this gives a completeness to the work of instruction which it would otherwise not have, for no saw is truer than that old one that "two heads are better than one even if one of them be a blockhead." Each mind has its particular point of view from which certain sides of a question, certain lines of development are invisible. The mind of a child that has had but a single teacher is not equally and symmetrically developed. The second teacher finds unexpected spots that are uncultivated while in other places there is an equally unexpected development.

Not only does the school have the advantage in bringing the pupil in contact with more than one teacher's mind, but also in contact with the minds of other pupils in the class. There is a greater stimulus to study in a class of four than in a class of one. There is an action and reaction of one student upon another producing growth in both. One enthusiastic pupil affects all. Enthusiasm is contagious. That of the teacher and the pupil react upon each other and increase the power. Class work cultivates the habit of *voluntary* concentration and attention to a greater degree than individual teaching and this is the force that clinches the fact on the inside and holds it fast. In private instruction it is very difficult for the teacher to maintain that regularity in hours and times of teaching that is so essential for systematic study. There are always in the home life very many diversions from which the school is exempt, often trifling, yet serious in their results for they prevent the formation of habits of continued application and orderly work. It is almost impossible to create in a home the proper educational environment. The gentle restraint of a school, the regular round of duties in which all share and to which everything else is subordinated, has a strong influence upon the earnestness of the work and the cultivation of the habit of systematic effort.

I know that there is a general impression that in point of fact a comparison to-day from an intellectual standpoint of the products of private instruction with those of our schools would result decidedly in favor of the former. Instances can be cited which would seem to show this and yet I do not think that these prove that private iustruction is better than school instruction, but simply that it is better than *some* school instruction as some schools are constituted to-day. All the schools for the deaf that I know anything about are suffering, with a greater or less acuteness,

from the disease of poverty. As the good old deacon said, when appealed to in behalf of foreign missions, their "circumstances are somewhat pecuniary."

The Principals cannot organize their schools on the generous and ideal basis that they would like and are therefore handicapped in their work. As year by year they are obtaining greater recognition and larger means they are steadily improving in results. If they were given all the money necessary to secure all the advantages possible in school life the results would surprise many of the advocates of private teaching. It is a pity that the free public institutions, through lack of sufficient endowment, are unable to offer all the advantages possible under more favorable circumstances and that they cannot eliminate all the disadvantages, and yet that does not alter the fact that if they had the necessary funds they could combine all the advantages of protection from evil, association with others, and the requisite individual attention. School-bred pupils are so much more numerous and so much more in the public eye than the private pupils that the successes from the schools are overshadowed and hidden by the cloud of those not so perfect, whereas only the best results of private instruction are ever brought to public notice.

This brings me to my third and most important cause for the favor with which private instruction is regarded; a too narrow conception of the meaning of education. The word is derived from the Latin *e ducere*, meaning "to lead forth," and I believe that this was the idea dominant in the minds of the Latins, that education is the drawing out and developing of the powers and faculties lying latent in the human mind.

The *Century Dictionary* denies authority to the use of the word in this sense and yet here is its definition of education. "Education in its broad sense, with reference to man, comprehends all that disciplines and enlightens the understanding, corrects the temper, cultivates the taste and forms the manners and habits." The growth of a child's mind and character is like the growth of a tree. It is from within outward and it grows by a power inherent in itself and not external.

You cannot cut a hole in a sapling and by forcing in prepared nourishment compel new branches to leap forth and leaves to appear. On the contrary you quietly surround it with the materials which it is able to assimilate and working with which *that strange* power within can produce the full grown tree in all

its strength and beauty. So the character and mind of a child slowly develop and expand by the absorption and assimilation of those materials which it finds about it. But the mental development of the child is only a part, I had almost said a very subordinate part, in his education. In the definition I have quoted there is the one word "understanding," but there are the four words, "temper, taste, manners, and habits." "Education" says a great writer "in the true sense * * * is the unfolding of the whole human nature. It is growing up in all things to our highest possibility." Mental development without self-control, self-reliance, ambition and a full appreciation of the rights of others is worse than useless, it is dangerous. It is like a rifle in the hands of a savage. It confers power without that which is needful to guide and control it.

It is just in this broad field of character development, the education of our human nature, that private instruction fails and school instruction succeeds. That which we learn from books forms but a minor portion of our working knowledge and our governing force. It is from those about us that we acquire that by which we are recognized in the world. Man is a gregarious animal. The great Locke in writing upon education says that the influence of companions is the grand influence of all. "Having named company," he says, "I am almost ready to throw away my pen and trouble you no further on this subject." Man in his normal and healthful condition is a social being, and shut out from association and companionship with those of his own age and position in this world and of the same needs and interests becomes morbid, morose, disagreeable, selfish, in a word, unnatural. The association with those on the same level in life, in age, attainments and social position, whose pleasures and sorrows, desires, ambitions, rights, and modes of thought are kindred, is absolutely essential to the complete, harmonious development of any child. Says Frœbel, the great educator, whose master mind is beginning to be felt throughout the world, "The social impulse, the love of others beyond the narrow range of self and of one's own home cannot be properly excited and developed, except where members, and these from different homes are gathered together." In his scheme for ideal education he "places the child with other children amid favorable surroundings and gives it the companionship of persons whose knowledge

and training fit them to guide, guard and help it in its development.

The necessity for association is doubly great for a deaf child, the whole tendency of whose infirmity is toward seclusion, isolation and retirement. School life, or something comparable to it, is the only weapon with which to conquer these evils. The child who is kept at home and given private instructors grows up to be timid, self-distrustful, unfitted to cope with the difficulties and oppositions of the world. He falls an easy prey to temptation and is quickly discouraged by obstacles. Being associated so much with adults he becomes prematurely old in manner, language and ideas. Very often he is selfish, narrow and overbearing. Not having those about him of his own age and desiring the same things he has become accustomed to having people yield to his whims and fancies as child playmates would not yield. In the deaf child each of these tendencies is intensified. He is more or less excluded from many of the plays and pleasures of childhood. All those about him have an advantage over him. There is but little in the company of grown people in which he can fully and freely take part. He feels this and it has its tremendous contracting effect upon his whole nature.

On the other hand the tendencies of the school-bred child are to be simple, natural and child-like. His inclination to moodiness and suspiciousness is much less. He is happier. He knows as much of what is going on as those about him. He does not feel excluded and ignored to anything like the extent of the privately taught boy. He rapidly becomes self-reliant, independent and respectful of the rights of others. He is less petulant and more obedient. How many times have we all heard mothers and fathers say, "At school they have no trouble with him, but at home he is very hard to manage." In short, the school-bred child is much better fitted to take his place in society which is a true organism, in which every individual member is at the same time a means and an end. Herbert Spencer says, "To prepare us for *complete living* is the function which education has to perform." Complete living includes all relations with our fellow human beings. "No man liveth to himself and no man dieth to himself."

As isolation is so strong a tendency in the deaf child he should begin very early to learn to understand the speech of as

many different persons as possible. Peculiarities of speech are as marked as peculiarities of handwriting and one who reads all kinds of chirography with ease, even to a doctor's prescription, has only acquired that ability by constant practice on many varying specimens. Therefore the child should never be allowed to become dependent upon the lips of any one as interpreter, either teacher or parent, but should be given as much practice as possible in reading the lips of many different people. By so doing he is at the same time also fighting the next greatest hindrance to his progress, which is the natural diffidence and reluctance of the deaf to mingle in general society. In these respects the school-bred child has a great advantage over the one who has always been closely guarded at home.

All parents of deaf children desire to have them act and seem as nearly like other people as possible in manner, expression and ideas. They wish them to get as much out of the world as is in their power. This is only attained in its highest degree by those who have been educated in constant association with others of their own age and station and have always been treated as nearly as practicable in the same manner as those who can hear. The wisest parents do not educate their hearing children at home, nor should they their deaf children if they can find schools of a character similar to the ones the hearing children attend. This is so because the only advantages claimed for private instruction are not *exclusively* possessed by that method but *may* be combined with the advantages of school life, whereas those of school life are peculiar to it and cannot be enjoyed in private teaching. The desirable features of exclusive individual work affect but one portion of the boy's development, while those of a school affect all and it is the whole boy which we have to deal with and it is by the standard of the whole man that results must be measured.

Theoretically we would all probably grant the superiority of the school. In principle it has a most decided advantage over private instruction. The solution of the question lies in providing the right kind of school. To quote once more from Locke, you must find a school "Wherein it is possible for the Master to look after the Manners of his Scholars and show as great Effects of his Care of forming their Minds to Virtue and their Carriage a good Breeding, as of forming their Tongues to the learned Languages." If, then, we look upon education in its true and broadest light as preparation for life in all its complexity of duties

toward man and God, it is evident that association and companionship must play a very large part in the process. When we realize that the imparting of information and training of the intellect is but an incidental feature in the development of all the wonderful faculties and powers which go to make up character, then we shall understand that private instruction in the narrow circle of the home is not the best way to make of the children natural, symmetrical, manly and womanly men and women.

WORDS AND LANGUAGE

BY

DR. T. A. HUMASON.

WORDS AND LANGUAGE.

I remember upon the occasion of a visit at the Clarke Institution, in response to an inquiry as to what part of the work I desired to see, I asked to be taken to a class where I could witness language teaching. "Well," was the reply, "you can see that in every class in the school and at every hour of the day." I think, if we were to compare notes, we should all agree that language is the point toward which all the exercises of our classrooms lead; and that, while our daily programmes are varied by assigning to the work of the several hours such names as, Geography, History, Literature and Physics, we could, with equal truth, abbreviate the schedule by denoting the work of the first hour of each day by the word "Language," and that of each succeeding hour by ditto marks. To give our pupils understanding of language and ability to use it is our most important school work. True it is, we give attention to articulation, but perfect articulation avails nothing except when coupled with the power to use language. We teach writing, but writing is meaningless to him who does not understand language, and valueless to him who cannot use it. We try to keep always in mind the higher aim of education, the development of the mind, and its highest aim, the formation of character, and yet, we realize that it is chiefly by language that we are to attain these noble ends.

The object of education is to assist nature and to enable the mind to unfold more easily and more quickly than it could without assistance. Whenever, therefore, a question arises as to the course to be pursued, the first thing for the teacher to do is to consult nature. Nature has laid out the line of march, the marshalling of the forces is left to the teacher.

If, then, we are to assign such great importance to language teaching, it is of the utmost consequence that in teaching language we proceed upon correct lines, and the only way to determine what those correct lines are, is by careful study of the way language is acquired naturally and under normal conditions. The fact that our

pupils are not normal and that we must lead them to acquire by one sense what the normal child acquires, by another, necessitates a change of *methods* but not of *principles.* The road by which the hearing child travels to the understanding and use of language, is the road by which we must lead the deaf child to the same end. How he shall traverse that road and how he can be led most rapidly are questions which we must decide for ourselves. But nature has marked out the road which we must take, and deviation from that road, however fair the prospect that tempts out of our path, can only result in making our journey longer, while it is possible to stray so far from the way, that we may never reach the end for which we started. To do violence to natural principles is to work inevitable injury.

But how shall we discover the processes by which the child acquires language? Memory cannot recall our own experience. To analyze present mental states, to unravel the multitudinous threads of mental experience and trace them back through the labyrinth of windings which has been forming every hour from babyhood down to to-day, is a task too momentous to undertake, but it is possible, by studying the child and his environment, to determine the course of his progress with quite as much accuracy as though we could recall our own baby experiences.

It is possible to divide the processes by which the normal hearing child acquires language into three periods, each period marking the beginning of a new process. These three periods, however they may differ in the time of their beginning in different individuals, are, in every case, distinct and separable. For reasons which you will readily see, I shall call these periods, first, the Associational; second, the Receptive; and third, the Expressive. The first or associational period begins, we may suppose, soon after birth; the second or receptive period, at an uncertain time, usually about the end of the first year, and the third or expressive period, at the time the child commences to speak. Do not understand me to mean that one period terminates when the other begins, for the processes which distinguish these three periods, when once begun, continue throughout life. Thus throughout the greater part of child life and the entire adult life, these three processes continue side by side.

During the first or associational period, language conveys no meaning to the child whatever. He hears it, as a succession of varying sounds and, at the same time, perceives certain states or changes of environment. Notice, please, that he distinguishes no

words as such, but simply feels the sensation of a sequence of sounds of a greater or less length. We may justly assume that he perceives the sentences or collections of sentences spoken together, as units. He hears the expressions, "Johnny, shut the door," "Johnny, bring me the newspaper," expressions to him entirely meaningless, and, in connection with those sounds, he sees Johnny shut the door and bring the newspaper, though he may not be conscious of the meaning of the movements which he sees. Gradually, however, after hearing innumerable repetitions of the same clause or similar clauses, he begins to associate certain series of sound sensations with certain states or movements in his environment. Now, when he hears a given sequence of sounds, it suggests to him the corresponding state or change in his surroundings or in himself, he looks for that suggested state or movement and is doubtless pleased to find his expectation realized. When this point has been reached, the child has already begun to understand the meaning of language, and has entered upon the second or receptive period. During this period, and, in fact, from this time forward, language has for him a meaning. He receives ideas from what he hears. It goes without saying that he does not understand all he hears; in fact, at the beginning of the receptive period, he understands but very little; but his powers of association are intensely active, and very rapidly the field of his understanding of language widens. Let me emphasize the fact that up to this time, he is aware of no such thing as a *word*. A single, isolated word he has rarely, if ever, heard, and such would convey to him no idea whatever. What he does understand, is the meaning, not of words, but of phrases or sentences as wholes.

And now begins a process as significant as it is beautiful. So far as we know, it is the first process of deductive reasoning which the mind performs. Heretofore, he has simply heard sentences and received the suggestions associated with them; but now he begins to discriminate, to compare the phrases he has heard, one with another, and, at the same time, to compare the facts in his environment which are the correlatives of those phrases; and as a result of these comparisons, he finds that a certain set of phrases have one sound in common, and the corresponding suggested circumstances have one object or action in common. To make my meaning clear, I will cite an instance of what I mean. Throughout the child's previous life he has been hearing such sentences as these: "Does baby see mamma?" "Does baby want to come to mamma?" "Mamma

has gone away," "Mamma is coming," and a thousand others of the same kind. At first he perceived these as wholes and by association learned their meanings; and now he begins to compare them one with another; and what does he discover? He discovers that these sentences have one sound in common, one common factor, namely, the sound "mamma." He then compares the ideas which he has learned to associate with those sounds; and what does he discover? He discovers that those ideas have also a common factor and that factor is his mother. The last step is to couple the common factor of the sentences, the sound "mamma," with the common factor of the correlative ideas, the person, his mother, and he has his first knowledge of a word.

This process of picking out one sound or word which is a common factor of several sentences, is not unlike that by which we find a common factor of several numbers, and it belongs to the same class of reasoning as that by which the chemist discovers that carbon is an element both of the living tree and of coal dug from the earth. It is a process of deductive reasoning.

In the same way, the child proceeds to pick out other single words which are common to many sentences, until he has practically split up into words, all the language with which he is familiar. And now, with the beginning of the third or expressive period, begins another most beautiful process. At first he has looked upon sentences as wholes, much as he might look upon a collection of toy houses, each sentence representing a building by itself. True to those impulses which are at once the instincts of the child, the scientist and the philosopher, he has proceeded to demolish those houses, to find out what they are made of; and having broken them up into their constituent parts, he has at hand the materials with which to construct new houses of his own, which he will fashion after the models of the original structures. He has first viewed the sentences as wholes; he has then broken them up into their constituent words, and having done this, he has at hand the materials with which he now proceeds to construct sentences of his own after the original models. And so begins the expressive period, which continues so long as the child, the youth, the man continues to express thought in words.

The lesson which nature teaches us, through this analysis of child experience, is this: That connected language is the first thing which the child grasps; and words are a deduction from language.

The child must understand language, in the sense of connected sentences, and must deduce his understanding of words, from the part they take in language as a whole. Then, having deduced the significance of words from language, he may make use of words for constructing language of his own.

This practice of deducing the meaning of words from the meaning of language is not confined to childhood. We often do the same thing in reading and in ordinary conversation. We call it judging the meaning of a word from the context. There is hardly a mental process more common or more simple. I will give you a sentence containing a word you never heard before, and to make sure you never heard it, I will represent it, as we do the unknown quantity in algebra, by the letter "x."

"John always tries to do his duty; he is an 'x' boy."

From this sentence alone you get immediately an approximate idea as to what "x" means. You may not be sure whether it has the force which we express by the word "good," or "faithful," or "obedient," but you have a general idea of its significance. If I were to use it in several expressions, each time you heard it, judging from its connection, you would gradually restrict its meaning, until, at last, it would convey to you a single, definite, specific idea.

This is not an unusual or an artificial process. It is the process which you have used in grasping the meaning of almost every word you know. How many words in your speaking vocabulary did you learn out of a dictionary; or how many were ever defined for you? Not one per cent, I will warrant. Yet every word which you understand or use to-day, which was not so acquired, you have learned by deduction in the manner which I have indicated.

There are two ways of teaching language which I have observed in schools, and I am sorry to say, I have seen much more of the wrong way than of the right. One is by leading the child to deduce his understanding of words from the relation they hold to language (the process of which I have just been speaking); the other is by giving the child a knowledge of single words and trying to build up his understanding of connected language by taking the sum-total of the individual ideas. One is an analytical process, passing from the whole to its parts; the other is a synthetic process, passing from the parts to the whole. One is the order of nature; the other is the reverse. By following the one, we lead the child

by the straight road which nature has marked out; by following the other, we may think we are taking a short cut cross-lots, but we are surely starting in a direction which will never lead to the desired end. By the one process, the understanding of language grows naturally like a tree. To pursue the other course, is like collecting sticks, placing one in the ground as a trunk, fastening others to it as branches, and fixing upon the branches dead leaves and blossoms; and the grasp of language attained in the one way resembles that gained in the other, very much as the living tree resembles its artificial counterpart.

I have watched the workings of a school where language is taught exclusively by this building up process, and I have never seen a person so educated, who had any adequate understanding of English. The same thing is seen when we try to learn Latin by the ordinary college method. A person learning French by the modern natural methods can get a good knowledge of the language and the ability to speak it in, say, a year or two years; but did you ever see any one who attained a speaking knowledge of Latin in two, four, six or twenty years? I never did. One can learn to *translate* Latin by the usual methods, but never to use it spontaneously. And the difference is not in the language,—it is in the methods employed in teaching it. The college gives the student first a dictionary, second a grammar, and third a reader. It begins by defining words and attempts to give the student understanding of connected language by asking him to combine the ideas of the individual words. We do the same thing with our pupils when we give them the meanings of words and ask them to derive the meaning of a sentence by taking the sum-total of the word-ideas, or when we attempt to explain a sentence by defining its constituent terms.

No idea could be more erroneous than that of supposing that by thus teaching *words* we can teach *language*. You might just as well show a savage, brought up in the woods, a nail, a brick, a piece of wood and some plaster, tell him to take the sum-total of those ideas and expect him to have a clear idea of a *house*, as to tell a child the meaning of the individual words of a sentence and expect him to derive the force of the sentence as a whole. The sentence, like the house, is, as it were, an organic structure, and, as such, has characteristics which are not present in the materials of which it is made. The sentence is a chemical compound into which the words enter as elements, thereby losing,

to a certain extent, their individuality, and uniting to form a new substance, different in character from its constituent elements. The sentence as a whole has a significance which is not the sum-total of the word-ideas and which cannot be found in them.

If you need any proof that you can understand the words in sentence and yet not understand the sentence as a whole, let me read you the opening sentence of Tacitus' "Life of Agricola." This is made up of very common words and those of you who have any knowledge of Latin will readily understand them as I read. And yet you will pardon me if I say that, while you may doubtless understand this sentence by studying and translating it, I do not believe that one of you, who is not familiar with it, will readily grasp its meaning:—

"*Clarorum Virorum facta mores que posteris tradere, antiquitus usitatum, ne nostris qnidem temporibus quamquam incuriosa suorum ætas omisit, quoiiens magna aliqua ac nobilis virtus vicit ac supergressa est vitium, parvis magnisque civitatibus commune, ignorantiam recti et invidiam.*"

Now let me read you the same sentence in English and it will be immediately intelligible:—

"The ancient custom of handing down to posterity the deeds and characteristics of illustrious heroes, has not been omitted even in our times, indifferent as this age is to its great ones, whenever great and noble virtue has conquered and overthrown the vices common to great and small states, ignorance of the right and envy."

Now what is the difference between your understanding of this Latin sentence and that of the English? To say that you are more familiar with one language than the other does not explain it. Is not this the real explanation? In the first case you understood the words but not the language; in the second case you understood both words and language. The deaf child, taught language by the building up process, when he confronts an English sentence, finds himself in the same position that you occupied respecting the Latin sentence. He may be able to define each word but he does not understand the sentence as a whole.

It is in connection with this synthetic process of trying to make language intelligible, that the teacher often resorts to definition. Definition, however useful it may occasionally be at a later period, should have no place whatever in language teaching. Yet it is astonishing to what extent it is used in some of our schools. Here is a question I once heard asked by a noted teacher of the deaf. The

Geography, with characteristic modesty and simplicity, had remarked that the buffaloes on the western plains had nearly all disappeared. In order to draw out the subtle meaning that lay hidden in that obscure expression, this clear and incisive question was asked: "What has become of what does become of mean become of means where are they now what has become of the buffaloes?"

Defining words, during the period of language acquisition, does no good and much harm. In fact, I believe it does more harm than any other practice of our schools. The intention of defining the words in a sentence is to give the child an understanding of the sentence as a whole; but we have seen that in this respect it is an utter failure. On the other hand, this practice does harm in several respects. In the first place, defining the force of a word in a sentence limits the meaning of that word, in the child's mind, to its force in that particular case; whereas, almost every word we use is capable, in combination with other words, of assuming many different meanings.

In the second place, by explaining the words to our pupils, we spare them the effort of deducing their meaning from their relation to language as a whole, which is the most valuable mental discipline a child can have. We thus do our pupils' thinking for them, and render them incapable of independent thought. Did you ever think what an important factor in our mental life *guessing* is? It is by guessing that we get our first idea of the meaning of almost every word in our vocabulary. To the deaf this faculty of guessing is doubly important, for not only should they employ it in dealing with every new word or expression they meet, but speech-reading is largely made up of guessing, and other things being equal, the better the guesser, the better the speech-reader. It is very important that we give our pupils practice in guessing and there is no practice so good as that of deducing the meaning of words after the natural process which I have indicated.

But perhaps the greatest objection to defining words lies in the fact that, by so doing, we place an intermediate step between the verbal symbol and the thing or act signified; whereas, in order that language shall be understood and used spontaneously and not as mere translation, it is absolutely essential that the *mind pass directly from the word to the idea.* To him who rightly understands language, a word is not the symbol for some other *word*, but the symbol for an *idea.* To use a figure borrowed from myself, teaching language by definition is like giving a crutch to a child

with sound limbs, teaching him to use it and persuading him that it is necessary, until at last he is unable to walk without it.

It is not the intention of this paper to enter into any detailed account of the methods which I have used or would advise using in teaching language; but I cannot forbear to mention the chief means of language teaching, namely, reading. Reading must be the substitute to the deaf child for the continuous flow of conversation to which the hearing child listens from morning to night; and if the child can only become a habitual reader, there can be no need of a better substitute.

Notice, now, the difference between children taught language by the two general methods which I have described, in their attitude toward reading. Of course the reading matter will be, as it should be, in advance of the pupil, and will contain words which he does not understand. When a child taught by the deductive or analytical method meets a sentence containing unknown words, he deals with it in precisely the same way in which he has dealt with sentences all his life. He grasps the meaning as a whole and deduces his understanding of the unknown words from the significance of the sentence as a whole. It is the very process which he has been using all his life. The child taught language by the synthetic or building up process, on the other hand, deals primarily with words and tries to understand the sentence by first understanding the words. The inevitable result is one which we have seen, alas, too often; when such a one encounters an unknown word, it completely blocks his way and brings him to a dead stop. One so taught cannot read and it is only with the greatest difficulty and with very questionable results, that he ever learns to read.

If Prof. Hill, of Harvard, had been a teacher of the deaf, and had referred to our special work, he could hardly have spoken more to the point than when, in his "Elements of Rhetoric," he says as follows:—

"The first thing, then, to be done by a man who would learn to speak or write well, is to enlarge his vocabulary, and the best way to do this is to make himself familiar with the classics of his native tongue, taking care always to learn with the new word its exact force in the place where it occurs. Words may, of course, be gathered from the dictionary; but it is far more profitable to study them in their context. For this purpose, books that one really enjoys are better than those, in which, though intrinsically more

valuable, one takes a languid interest; for the memory firmly retains that only which has fastened the attention."

Reading is the great language teacher; and it is much more; for not only does it give understanding of language and ability to use it, but, at the same time, it introduces the child to an intimate acquaintance with the greatest minds and hearts of all time.

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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

THE WORK IN GENERAL HISTORY AND LITERATURE IN THE NORTHAMPTON SCHOOL

BY

MISS KATHARINE FLETCHER,

AND

ORAL WORK PREPARATORY TO INSTRUCTION IN GEOGRAPHY

BY

MRS. M. L. SMITH.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

HARVARD COLLEGE
JUN 25 1897
LIBRARY.

THE WORK IN GENERAL HISTORY AND LITERATURE IN THE NORTHAMPTON SCHOOL

BY

MISS KATHARINE FLETCHER

OF THE

CLARKE INSTITUTION, NORTHAMPTON, MASSACHUSETTS.

THE WORK IN GENERAL HISTORY AND LITERATURE IN THE NORTHAMPTON SCHOOL.

The disquiet experienced by the little girl in Wonderland, when she was suddenly called upon to entertain her awe-inspiring companions with a story and was afraid she did not know one, was probably no greater than my own when it was proposed that I should present to the American Association to Promote the Teaching of Speech to the Deaf an outline of the work in general history and literature done in the Clarke Institution. In view of a subject of such infinitude as that of the teaching of history and literature, the petty results which we have been able to attain look so insignificant that there seems to be nothing to say except to echo Canning's

"Story! God bless you! I have none to tell, sir!"

Where the field is the world, there is manifestly no possibility of recording a harvest in any degree commensurate unless one can go on in Scripture phraseology and add that the reapers are angels.

It is then with a comforting assurance that nobody is likely to set a much lower value on this work of ours than we do ourselves, or to realize more fully how meagre and unsatisfying it has been, that we proceed, as has been requested, to show what we have tried to do and the little that we think we have really accomplished.

In this discussion nothing will be said of United States history, as a class generally finishes its regular study of that subject before beginning the work which we now propose to consider.

In studying the history of our own country a child has so often been brought in contact with that of England that he will naturally take that next. An hour a day for recitation or any exercise that may be assigned in the classroom, and about three-quarters of an hour for study in the evening are usually allotted

to this work. Each pupil has a copy of Miss Yonge's Child's History of England, Barnes' General History, and Champlin's Young Folks' Cyclopædia of Persons and Places, all of which are at his elbow in study hour, for he knows he is as likely to want one as another. No one of the three is at all satisfactory alone, but together they supplement each other fairly well. Besides these, Myers' Mediæval and Modern History is often consulted, and frequent reference is made to the larger biographical dictionary and to the common encyclopædias—Appleton's and the Britannica.

In giving out the work to be done in the evening it is the exception rather than the rule to assign a certain number of pages in any book. Instead, the directions often take the form of, "To-night learn all you can about the war with France in the reign of Edward the Third," or, "To-morrow tell me everything you could find about Mary Queen of Scots." Sometimes the class is told, "To-morrow we shall talk about the reign of———. There is a great deal more that you must know about this reign than you can learn in one day, and we shall have several lessons on it, but to-night each one of you may choose some important thing, or two or three if you can, and tell all you can about them to-morrow." Here Barnes' History with its italicized and capitalized headings provides useful guide posts. Results will vary greatly with different pupils, but it is a very poor specimen of a scholar who will come to recitation the next day with nothing or next to nothing to offer, and his case calls for special treatment.

It is hardly necessary to say that such work is not final. We do not leave it to our pupils to decide what they shall learn and what omit, but before the study of any period is considered finished the teacher gives them a written outline which she prepares herself for them to follow. To show just what this is, let me give a page—written before this paper was dreamed of—which will be a fair sample of the whole. The class for which it was prepared consisted of seven members, the youngest thirteen years old and the oldest sixteen. One became deaf at five years of age, one at one year, and five were born deaf. At this point they had just finished the Tudor reigns. As will be seen, this outline simply indicated subjects for study without furnishing any text. Printed books gave the *latter.*

THE STUART SOVEREIGNS—1603-1714.

"This period began with the idea of the divine right of kings, and ended with the idea of the divine right of the people.

"What was the characteristic feature of the first four of the Stuart reigns? [See Barnes, page 494.]

"JAMES I.—1603-1625.

"1. Give the pedigree of James the First as far back as Henry the Seventh.

"2. What was he called in Scotland?

"3. What nickname is frequently given him?

"4. What did Sully, the French statesman, call him?

"5. Describe him, physically and mentally.

"6. What *was* the theory of the divine right of kings?

"7. What was the position of James the First in regard to ecclesiastical matters?

"8. What can you say of the great literary work of this reign?

"9. What did James write himself?

"10. The Gunpowder Plot.

"11. The impeachment of Lord Bacon.

"12. The execution of Raleigh.

"13. Foreign colonies established in this reign.

"14. The relations between Parliament and the King.

"15. What did the historian, Motley, say of James the First? [This refers to a quotation which had been given them from the Life of Barneveldt. "He was slowly digging the grave of the monarchy, and building the scaffold of his son."]

"16. Who were 'Steenie' and 'Baby Charles'?

"17. Tell about their journey together.

"18. What became of Buckingham eventually?"

This is all that was done with the reign of James. It might seem fitting to close the account of the reign with the death of the king, but as men are apt to die, and as there was nothing of special moment about the death of this one, no particular attention was called to it, but the class went on to see how Charles continued the work of his father until "the grave of the monarchy" was finished, and he bowed his stately head on the completed scaffold.

In writing these outlines very little thought is given to simplifying the language, but the ideas are allowed to express themselves

in words of their own choosing. Not that these pupils were able to understand without explanation such expressions as some of these just quoted, but that we believe the best way to secure a free and natural use of language on their part is to use it freely and naturally ourselves in all our communication with them. It is very certain that every pupil studying that lesson understood the language before the subject was dropped and another introduced. While we spend a good deal of time in teaching history because we are convinced that no branch of study in any school course can have a greater educational value in itself, we count it an especial good fortune that it is such an incomparable medium for the teaching of language. Even if the doings of Martin Luther and of Oliver Cromwell had had no more influence upon the life of the world to-day than had those of "the brother of the cabinet-maker" or "the uncle of the wife of the baker" whose acquaintance some of us made long ago in the fascinating pages of Fasquelle's French Grammar, still our children might well afford to pore over the details of their meaningless lives, even as we did over those of Fasquelle's heroes, and with the same object that we had — to get into the language. Fortunately, however, we are not forced to deal out any such stuff to our older classes, but as a basis of their linguistic work we can give them much of the very best thought of which we are masters ourselves.

In its first stages this work in the classroom is all oral. I do not mean that there is any hard and fast rule about it which prevents the teacher from writing on the blackboard an unfamiliar name, or any other word which any member of the class has much trouble in getting from the lips—time is too precious to be wasted—but I do mean that the recitations by the pupils and the talk of the teacher, which is in the words of Moore an "everlasting flood," are both almost wholly by word of mouth.

After topics of importance have been pretty well developed in this conversational way, as many sketches are written out by the pupils as there is time for. It is just here that one looks back wistfully to the good old times when a man's biography ended thus:—

"And all the days of Methuselah were nine hundred sixty and nine years; and he died."

The lesson given shows the general way in which the whole history of England is treated. While the stories of the *Field of* the Cloth of Gold, and of the magnificent revels at

Kenilworth with which my Lord of Leicester entertained his queen, are of much interest to these young students—as we are not ashamed to admit that they are to some children of a larger growth—we endeavor to instil the idea that it is not by pomps and pageants that England has gained the position she holds among the nations. With immature minds like these, work must be elementary in character, but an attempt is made, and it seems to us with some success, to awaken an interest in the slow growth and development of the political and religious principles which underlie English civilization and in the literature which is its bright, consummate flower. That they give such subjects some thought was proved only the other day when the teacher happened to quote the assertion of Matthew Arnold, "By nothing else is England so glorious as by her poetry," which was immediately challenged by a young philosopher of thirteen summers who stated it as his unalterable conviction that England's glory rests quite as much upon her wise legislation as upon her poetry. Who shall decide when doctors disagree?

In connection with their English history, we try at every turn to bring these boys and girls into vital contact with English literature. They begin Shakespeare with King Lear almost as soon as they begin the history itself. The story is told them, and they read Lamb's version and bits from the play. Cymbeline follows in its proper place, and they learn more of the mythical Macbeth than of the actual Edward the Confessor. So they go on, of course getting only a little here and there, but enough to give them a very strong impression that Shakespeare is the king of story-tellers, and that he has certainly written a few lines of exceeding beauty. Next to Shakespeare's creations in their estimation stands Tennyson's epic of ideal chivalry, the matchless Idyls of the King. Outside an asylum for idiots no child of fourteen can be found who, if his school training began at a proper age, will be indifferent to the stories of the Round Table and the search for the Holy Grail. As with Shakespeare's plays, the Arthurian legends are first told by the teacher—and no speaker ever had a more attentive audience—but in giving these poems in one's own wretched prose there is such an unavoidable sense of guilt in thus putting asunder what the great god Apollo hath joined together in divinely inspired verse that conscience forces one, before leaving the subject, to give more or less in its

original form. These quotations are copied in books which are kept for the preservation of such extracts.

As a regular study our pupils have a series of lessons upon great authors and their works. We know no printed text-book which is at the same time sufficiently broad and sufficiently narrow to meet our needs, and so we prepare one ourselves. Its range at least is comprehensive enough, covering the ages and nations between Homer and Holmes. The authors to be considered are selected according to the best judgment, and the sketches are written according to the best ability of the teacher who does this work. The youthful critics to whom these productions are submitted are kind enough to pronounce them interesting, and we believe they are of some benefit in supplying a necessary frame-work. There is, however, no doubt that scraps and snatches of genuine literature, introduced here, there and anywhere in their daily exercises, are of infinitely more value to the children than are these formal lessons.

After our pupils have gained a comprehension of any poem which may well be a source of lifelong pleasure, we encourage them to commit it to memory. In this matter we feel we cannot do better than to take a hint from the ancient Greeks, whose educational methods, if we are to judge by results, have hardly been surpassed. We do not know whether the little Athenians ever engaged in an exercise dear to our hearts and wrote out Homer, as we say, "in their own language," but we do know that they learned him in *his*, which, all things considered, was perhaps even a better thing for them to be doing.

A list of books either of English history or historical fiction read by last year's class may be of interest. This reading was advised by the teacher but was not compulsory. Some members of the class read every one of the volumes here mentioned, and the others read most of them.

Dickens's "Child's History of England."
"Little Arthur's History of England," by Lady Callcott.
"Leading Facts in English History," by D. H. Montgomery.
"English History in Short Stories," Anonymous.
"Young Folks' History of London," by William H. Rideing.
"Stories from English History," by Louise Creighton.
"Historical Tales," by Charles Morris.
"Stories in English History," Anonymous.

"Tales of King Arthur and His Knights of the Round Table," by Margaret Vere Farrington.

"The Boys' King Arthur," by Sidney Lanier.

"The Normans," by Sarah Orne Jewett.

"Days of Chivalry," by W. D. Adams.

"Heroes of Chivalry," Anonymous.

"Life and Adventures of Robin Hood," by John B. March.

"The Story of Liberty," by C. C. Coffin.

"Magna Charta Stories," edited by Arthur Gilman.

"Heroes of the Crusades," by Barbara Hutton.

"Our Little Lady," by Emily Sarah Holt. [This is a pretty little story of the Reign of King Henry III.]

"In the Wars of the Roses," by Evelyn Everett Green.

"With the King at Oxford," by Alfred J. Church.

"Lamb's Tales from Shakespeare."

"Children's Stories in English Literature," by H. C. Wright.

"The Children's Champion," by Lucy Taylor.

The last named book is a biography of that eminent philanthropist, the late Lord Shaftesbury. No volume in our library has a greater popularity among our older classes.

It is indeed a far cry from Anthony Ashley Cooper, Earl of Shaftesbury, in the year of our Lord eighteen hundred and eighty-five, to Menes, King of Egypt in the year twenty-seven hundred before Christ, even supposing that his majesty lived at that time, and this supposition including the antecedent hypothesis that he ever lived at all. In taking a leap across a chasm like this, one would be glad to find a little firmer footing on the other side, but as this has not yet been discovered, it seems hardly worth while for a party of tourists like those we are conducting to flounder about very much in the slough. We do a little with Egyptian history, but not to learn much of individuals or separate events. No note is made of the thirty-odd dynasties which the historians so laboriously chronicle. Not one name is fixed in the mind except that of Rameses the Great before the conquest of Cambyses. The only object here is to get a little general idea of the mysterious nation which, to quote the words of another, "lighted the torch of civilization in ages inconceivably remote and passed it on to the other peoples of the West." The pupils add something to the knowledge previously gained in geography of the pyramids, sphinxes, colossi and ruined temples of Egypt; they learn of the Rosetta Stone and how it furnished a key to the hieroglyphics; they gather a little of what is known of arts and

sciences among the Egyptians, of their preparation of papyrus, their manufacture of glass, of fine linen, and so forth, and of their acquaintance with mathematics and astronomy; finally they study the religion of the Egyptians as manifested in the worship of the supreme triad, Isis, Osiris and Horus, in animal worship, in the doctrine of the transmigration of souls, in embalming and burial rites, and in the belief in a final judgment. After this general work they learn of the conquest by Alexander the Great and the establishment of the dynasty of the Ptolemies, and Alexandria is presented as the seat of Hellenic culture and the brilliant centre of the world's commerce and civilization. Nothing else is given of ancient Egyptian history except the tragic closing chapter.

Turning from the Nile valley to that of the Tigris and Euphrates, an attempt is made in the same way to give a little idea of the men and events that have made southwestern Asia memorable so that in their future reading the names Babylon, Nineveh, Assyria, Sennacherib, Nebuchadnezzar, Cyrus, Cambyses, and so on, may not be merely as sounding brass and as tinkling cymbals.

We then go further toward the East to study oriental religions a little, mainly to bring into prominence the fact that wisdom was not born with the nineteenth century, nor even with the Christian era, and that we, adherents of Christianity, hold no monopoly of the virtues. A sketch of the historic Buddha, condensed from the delightful article in the Encyclopædia Britannica, is given as a lesson, after which most of the class are eager to read the article itself, and do so with great interest and pleasure. Accustomed as they are from their heights of religious complacency to comprehend all forms of "heathenism" under the withering criticism, "very foolish," it is no little surprise to them to find among these "heathen" precepts of the purest morality and the loftiest ideals of human life. A glimpse of Brahmanism and the Vedas increases this surprise, and by the time they reach Confucius they are ready to acknowledge that ancient civilizations and strange faiths produced types of character and principles of living which they had supposed were our own peculiar property.

After they have thus come to the conclusion that spiritually we stand on no very exalted pedestal, overlooking the race, they

turn to Greece to see how far we may claim to be the intellectual giants of the world. With such an embarrassment of riches as Greek history offers on every side, what is one to choose? The question is perplexing enough, but there is some comfort in the thought that after all it does not matter much what particulars are given and what omitted, if at the end a pupil only realizes that he has been studying the first chapter in the political and intellectual life of Europe, and has then a conception of ancient Greece as the fountain and source from which has flowed all that the world has of best in civics, in philosophy, in art, and in poetry. A few months of faithful work under any intelligent guidance will not fail to develop such a conception whether the teacher presents one set of illustrations or another.

As a preliminary, our pupils take a geographical survey of the scene of action, not, however, with any great minuteness of detail, for we believe it better to add places to the mental map as they come up in the narrative rather than to learn their location when nothing else is known of them. Then follow a few lessons in mythical and legendary history. The Greek gods have at least one attribute usually ascribed to diety, that of omnipresence. Besides pervading literature, they have found such an incarnation in painting and sculpture, the fancies of the Greeks have so become the facts of the world, that there can be but one opinion about the usefulness of a certain amount of study of Grecian mythology. These pupils learn to recognize the Olympian dieties both by their Greek and their Latin names, as indeed they do many of the others. They soon see the convenience of this, as they notice that they are about as apt to meet them under one name as the other. In this connection the oracles at Delphi and Dodona and the Greek games and festivals are also considered. "The tale of Troy divine" and its companion piece, the story of the Ithacan hero, are given at some length, and here as elsewhere bits of poetry are learned word for word. Lines from Pope's Homer, Tennyson's Œnone and Ulysses, and Wordsworth's Laodamia are pretty sure to be among them.

Emerging from the twilight of myth and legend, something is learned of early Athenian and Spartan institutions and then the class begins the story to which no boy or girl ever listened unmoved — that of the mortal conflict between the ancient despotism of the East and the dawning liberty of the West. No matter how

long it takes, they linger here until the names Miltiades, Themistocles, Marathon, Thermopylæ, Salamis, and so on, are as familiar to them as are Washington, Lafayette, Lexington, Bunker Hill and Yorktown. Many of the old heroic tales are introduced, and interest never flags in this record of valor. The poetry which they associate with these events is from Byron.

In the brilliant period following the Persian Wars, we try to show the many-sidedness of Greek genius. Pictures of the Acropolis covered with temples and statues, and of the Dionysiac theatre on its sloping side, are examined carefully. They learn of the importance of theatrical representations as an educational element in the life of the Athenians, of the great dramatists of the time, and of the difference between a Greek theatre and our own. This leads to more or less about the every-day life of the people, their dress, houses, customs and manners. It often requires a great readjustment of old notions and the reception of a good many new ones before these young people can understand that social conditions the opposite of our own, and manners quite unlike those which they have been taught to consider the correct thing, were really compatible with the most elegant culture and the highest breeding. The girls are indignant when they find that schools were for the boys only, but the boys smile serenely. Everybody is shocked to hear that people ate with their fingers, and can hardly credit the statement that so great and so late a personage as Queen Elizabeth was guilty of the same impropriety. Once when they were told that at an Athenian banquet the guests wiped their fingers on pieces of bread and then threw the fragments under the table, one little fellow, with a most disgusted expression, looked up to his teacher as if he could never again put faith in any utterance from her lips, and exclaimed, "You said they were highly civilized people!" The master-pieces of Æschylus and Sophocles and all the works of art on the Acropolis were in his mind as dust in the balance compared with those unseemly crumbs on the floor.

We talk a good deal about the literature of the Age of Pericles, and the names of the great authors are learned and classified as historians, philosophers, dramatists and so forth. It is needless to say that the life and death of Socrates is the theme of surpassing interest. It is a bit of good luck to those of us who teach Greek history that Professor Jowett's Plato, which scholars tell us is the most masterly translation in the English language, should be in

such simple diction that much of the descriptive part can be understood by a child. Hear the dialogue in which Crito informs Socrates that the day of his death is at hand:—

SCENE:—The prison of Socrates. Persons of the Dialogue: Socrates, Crito.

Socrates. Why have you come at this hour Crito? It must be quite early.

Crito. Yes, Certainly.

Socrates. What is the exact time?

Crito. The dawn is breaking.

Socrates. I wonder that the keeper of the prison would let you in.

Crito. He knows me, because I come often, Socrates, moreever, I have done him a kindness.

Socrates. And are you only just arrived?

Crito. No, I came some time ago.

Socrates. Then why did you sit and say nothing, instead of at once awakening me?

Crito. By the gods, Socrates, I would rather not myself have all this sleeplessness and sorrow. And I have been wondering at your peaceful slumbers, which was the reason why I did not awaken you, because I wanted you to be out of pain. I have always thought you of a happy disposition, but never did I see anything like the easy, tranquil manner in which you bear this calamity.

Socrates. Why, Crito, when a man has reached my age he ought not to be repining at the prospect of death.

Crito. And yet other old men find themselves in similar misfortunes, and age does not prevent them from repining.

Socrates. That may be. But you have not told me why you come at this early hour.

Crito. I come to bring you a message which is sad and painful; not, as I believe, to yourself, but to all of us who are your friends, and saddest of all to me.

Socrates. What? Has the ship come from Delos, on the arrival of which I am to die?

Crito. No, the ship has not actually arrived, but she will probably be here to-day, as persons who have come from Sunium tell me that they left her there; and therefore to-morrow, Socrates, will be the last day of your life.

Socrates. Very well, Crito, if such is the will of God.

Could anything be simpler?

The last part of the Apology, too, is as clear as cut glass, and as perfect: "The hour of departure has arrived and we go our ways—I to die and you to live. Which is better God only knows." There is not much difficulty in understanding that.

Equally plain and easy of comprehension is the language of the last part of Phædo, describing the closing scene in the life of Socrates, when "holding the cup to his lips, quite readily and cheerfully he drank off the poison." There are several pages here which no senior class of ours ever fails to read.

Every teacher of the deaf knows the solid comfort there is in giving his pupils selections like these. It is so good once in a while to feel, "Now, at any rate, you are not obliged to content your hungry soul with one of my miserable paraphrases. You are getting the very best that the world has ever given to me."

To these boys and girls, as to the rest of the world, the record of this time is always one of the favorite chapters in history. One day last year a gentleman was visiting the class and the teacher asked him what kind of exercise he would prefer to see. Instead of answering, he turned to the class and asked, "What do you want to talk about for the next half hour?" The almost unanimous reply was, "Athens in the age of Pericles."

Leaving this subject with reluctance, a brief survey is taken of the periods of Spartan, Theban and Macedonian supremacy and of the Roman conquest. Here as everywhere there is only time to present characteristic features and the greatest names. When the class has finished the study of Greek history and literature—by which of course I mean when they have thus begun it—they copy into their quotation books, as an epitome of what they have learned, those lines of Shelley's—

> "'Let there be light!' said Liberty;
> And, like sunrise from the sea,
> Athens arose!'"

The following are the books relating to Greek history and literature read by last year's class, a class, as has been said, which contained but one semi-mute, whose reading was not at all in advance of that of the others. As with the list previously given, I do not mean to state that each book was read by every member of the class. Some read all of them, and the rest read nearly all.

"Child's History of Greece," by John Bonner.

"Young Folks' History of Greece," by Charlotte M. Yonge.

"Mythology of Greece and Italy," by Thomas Keightley.
"Tanglewood Tales," by Nathaniel Hawthorne.
"Age of Fable," by Thomas Bulfinch. (Only parts of this were read.)
"Stories from Ancient History, by "A Mother."
"Homer's Stories Simply Told," by Charles Henry Hanson.
"Adventures of Ulysses," by Charles Lamb.
"Stories from Homer," by Alfred J. Church.
"Stories of the Old World," by Alfred J. Church.
"Heroes and Kings," by Alfred J. Church.
"Stories from Herodotus," by Alfred J. Church.
"Stories of the Persian Wars," by Alfred J. Church.
"Stories from the Greek Tragedians," by Alfred J Church.
"Stories from Virgil," by Alfred J. Church.
"Young Folks' Plutarch," edited by Rosalie Kaufman.

After we have thus endeavored to give our pupils a faint idea of "the glory that was Greece," we try to show them a little of "the grandeur that was Rome." We tell the old familiar stories from Livy, which, whether they are history or not, are certainly literature, and then read extracts from Macaulay's Lays, dear to any school-boy, deaf or hearing. In the tale of the long struggle between the Patricians and Plebeians these students are taught to recognize an older version of the same story of contest between arbitrary power and the spirit of freedom which they found so prominent in English history. They watch the progress of the victorious Roman legions as they go on conquering and to conquer; note the boundaries of the empire in its widest extent; catch a glimpse of the material splendors of the Augustan Age, and have a few lessons on its literature; get a little notion of the luxury and vices of imperial Rome that were gradually undermining her power and working her ruin; and just here, in strange contrast, copy in their quotation books such extracts from the Meditations of Marcus Aurelius as, "Venerate the gods and bless them and do good to men," and "What then is that about which we ought to employ our serious pains? This one thing, thoughts just, and acts social and words which never lie," and "Never value anything as profitable to thyself which shall compel thee to break thy promise, to lose thy self-respect, to hate any man." This salutary teaching from the "wise and kindly heathen" shows these learners that when under one of his successors Christianity superseded paganism its ethical doctrines were by no means an absolutely fresh revelation to the Roman

world. The admiration of the imperial philosopher which such passages as these are sure to create is heightened by a sentence from Matthew Arnold's essay, which they also copy into their note-books; "The man whose thoughts Mr. Long has thus faithfully reproduced is perhaps the most beautiful figure in history."

It would be pleasant, and perhaps it would really be the most profitable thing we could do, to go on studying the precepts of a sage like Marcus Aurelius, but it is one part of our theory of the teaching of history that it should be made to serve as widely as possible as an interpretation of literature. In their future reading we want our pupils to understand allusions that they may find to the few great men who followed the Antonines, to the Eastern Roman Empire, to the Vandals, Goths and Huns, and especially to the downfall of the Western Empire. We propose that they shall have all the days of their lives as firm a hold on the date 476 as they have on 1492, and understand as well its significance.

Indeed in all our work in history from beginning to end we introduce as many great names and important dates as we conveniently can. The value of biography in work like ours can hardly be overestimated. Children are much more easily interested in a person than in an event, and as the two are as closely connected as Siamese twins it is just as well to present first the one with the more attractive face. The other must follow. A man's mind, like a baronial hall, is more delightful to its possessor as well as to the visitor if it contains a well-filled portrait gallery, and a child can not begin too young to make his collection. In this democratic age and nation we must most of us "go without ancestors," as DeQuincey says, but we have a collateral relationship of which we may well be prouder than of anything else on earth. A knowledge of the most illustrious of the men and women belonging to his great family seems almost like a child's birthright. Alas, if it so be that any teacher withholds it, and gives him instead—a mess of pottage.

As for dates, in these days of knowledge made easy, and of the outcry against "memorizing" anything, it requires all the courage of our convictions to make the acknowledgement, but truth forces us to confess to an unconquerable prejudice in favor of some exactness in historical lore. The knowledge that somebody did a certain thing sometime and somewhere is doubtless better than nothing, but it is too much like a jelly

fish. It lacks a skeleton. Those of us who find delight in history know that it is not to the teachers of our youth who let us off with the recital of entertaining anecdotes that we now look back with gratitude, but rather to those who held us to as rigid an account for accuracy of dates as if the numbers had been involved in a mathematical problem. And, in fact, a pupil's zeal in history is not weakened, but on the contrary is increased, by judicious infusion of chronology. Even a child can be made to see what a miserable, flabby thing the former is without the latter.

To return to our work in Roman history; it is not worth while to give the list of supplementary reading here, as in quantity and quality it is about the same as that reported in Greek. These books are read out of school hours and are not explained, but a large part of Shakespeare's Julius Cæsar is always read as a class exercise in the schoolroom. It requires very careful attention on the part of the pupils and an infinite amount of explanation from the teacher, but we never regret it. A year or two ago when the class had finished this, their teacher asked, "Which do you like better Julius Cæsar or———?" mentioning a simple little story they had read before. The uniform response was, "Julius Cæsar," and one or two added with a surprised expression, "Don't you?" Boys and girls like these are just at the interesting stage when they are beginning to be dimly conscious of the fact that there is such a thing as style in literature. They do not know it by that name. They have no general ideas about it, but they realize that there is an indescribable something—like the sheen on a bird's plumage, as John Burroughs says—about the protestation of Brutus, for example,

> "As dear to me as are the ruddy drops
> That visit my sad heart,"

which seems to make almost another thing of their own, "I love you very much," and while the latter is evidently preferable for an ordinary occasion, the transformation is often exceedingly curious and beautiful to them. It is this growing susceptibility to a new charm which makes all work in literature with children at this age a source of constant pleasure to both teacher and taught.

In teaching general history, never does one realize the awful magnitude of the task he has undertaken until he reaches the mediæval history of continental Europe. Then his heart sinks

within him. In this tangled maze it seems difficult enough to grope along alone, and the idea of leading a party of the blind through such a labyrinth is simply appalling. Approaching it for the first time one is inclined to say, "There is nothing I can do here, with children like these, except perhaps to paint a picture for them of Charlemagne and his times, tell the story of Dante's life and poem, and show the armies of the Cross and the Crescent fighting for two centuries over an empty tomb. There is no earthly use in attempting much more than this." A little experience, however, shows that the case is not quite so desperate. There are a good many other things in this confused time that our children may study with advantage. We begin now with the one institution which had enough inherent vitality to survive the shock of a falling empire, and which, having resisted the attacks of nineteen centuries, stands before their eyes to-day—the Christian Church. In studying the Papacy we distinguish between its spiritual and its temporal power, teaching of the latter something of its origin, growth, decline and final disappearance from history. To understand at all the position and claims of the mediæval Church, the class studies the pontificate of Gregory the Seventh, especially his tremendous struggle with the Emperor Henry the Fourth, and reviews the quarrel between the English king, John, and Innocent the Third. If the class is a bright one, that most interesting and most complex institution of the middle ages, the Holy Roman Empire, is brought before them, but if it is dull, we think discretion the better part of valor and ignore the existence of that shadowy world-monarchy. In other words, we do not propose to offer knowledge which is very unlikely to be assimilated and to result in mental growth. We often think it better that a class should learn only a very little of the Church in her political relations, getting instead a fuller idea of her in her spiritual character, something, alas! of the corruption which crept even into her highest places, but more of the generally beneficent influences which she exerted over all classes of society in these troubled times. They do not leave this subject until they have been impressed with the immense debt of gratitude which to-day men of all faiths and of none owe to the mediæval Church for its preservation of learning and literature through the dark ages.

It would seem a pity in such a study, brief though it must be, that the students should catch no echoes of the chorus of sacred song, which age after age has been ceaselessly ascending from the Christian Church, and we like very much here to give translations of some of the old Latin hymns. In our school day the first fifteen minutes in each classroom are set aside for religious teaching and prayers, and when our pupils are doing the work just described we arrange it to teach at that time a few stanzas of the simple matin-song, "Now that the day-star glimmers bright," ascribed to as early a hymn-writer as Pope Gregory the Great, and repeated after thirteen centuries in its beautiful English form by a Prince of the Church whose own piety gives added sweetness to the words—the revered Cardinal Newman. Among other hymns fragrant with the incense of ages we teach St. Bernard's tender, "Jesus the very thought of Thee," and his pathetic, "O sacred Head, now wounded," the exquisite, "Jerusalem the golden," of the other Bernard, and the child-like and touching, "My God, I love Thee," which flowed from the heart of that devoted missionary and canonized saint, Francis Xavier. A little of the life of each writer is associated with his verses, and after the hymns are perfectly learned one or another of them is often repeated in concert with the teacher before the morning prayer. Of course other and more modern hymns are also learned and repeated, but it not infrequently happens that the older ones are the especial favorites.

Perhaps one may say a word of the literary culture which is an incidental result of the other part of the short morning service just referred to. The prayers which are learned—we hope we may say "by heart"—and repeated together, are from the beautiful liturgy of the Episcopal Church. These are selected, not with the object of teaching the distinctive theology of the Prayer Book, but because we can find no other words of contrition and praise so expressive as those in which the Church, year after year, voices her "continual thanks" and her "humble confession to Almighty God." One would not quote for literary illustration words that have a sacred purpose, and, too, the prayers of the church are so well-known that quotations would be superfluous, but surely it is legitimate from a purely intellectual point of view to be glad that our children are thus storing their memories with some of the most perfect phrases and sentences ever formed by mortal man.

After this much about the Church the next lessons are upon the religion which arose at this time in Arabia to be for hundreds of years the great antagonist of Christianity. The life of its founder, its century of conquests, its check by Greek Fire in the East and by Charles the Hammer in the West, its establishment in Spain and the culture which grew up there alongside with it, its two hundred years of wars in the Holy Land and their effects upon the life of Europe—all are passed in review. We all know how children listen to a story like this, so full of adventure and romance and poetry, of the clash of arms, of slain warriors by the banks of the Guadalaquiver and in the pass of Roncesvalles, of mail-clad knights falling on their faces to kiss the sacred ground once trodden by the blessed feet of their Redeemer, and we know how gladly they take any book which you put in their hands that will tell them more of these things, or perhaps better still, the same ones over again.

When boys belonging to a base-ball nine propose of their own accord to stay fifteen minutes from the play ground "to hear the rest of it," no greater proof is needed, or could well be given, that they are getting something which suits them exactly. If the muse of History is the discriminating lady that we take her to be it is quite possible that some of the high-flown tributes which she receives from more fluent admirers give her no greater pleasure than do such little compliments.

No class can reach this point without having already learned a good deal about feudalism and chivalry, but we usually give another lesson to show their wide-spread influence, their different effects upon different classes of society, and the causes of the decay of these institutions.

A lesson on the formation of the Romance languages is followed by one on the dark ages, and this in turn by one on Dante. The latter sketch, for lack of a better—no, emphatically *not* for lack of a better, but for lack of ability on the part of our pupils to understand a better one—we have to write ourselves. This lesson has at the beginning a quotation from Shelley's Defense of Poetry—"Dante was the first awakener of entranced Europe," and we try to show how Dante's song, after the long night of the dark ages, was like the first bird-note in the early morning, heard before anything else has suggested a coming day. No Professor Jowett has written this out for us in childlike English—that could hardly be done—and so we have to tell it ourselves as best we

can. Since Professor Norton's delightful prose translation has appeared, we show that, with some of the more common metrical ones, to fix the idea, which was a surprising one when they began to study literature, that poetry is often translated into prose.

After such general lessons we do all we have time for in the special history of separate nations. The history of France is studied down to the present day, but not as much in detail as was that of England, and every lesson is made to serve as a slight review of English history. It is well understood that the question, "What was going on in England at this time?" may come in anywhere. We make a very short stay with the Merovingians, give as careful study as we can to the work of Charlemagne, and then whole reigns are passed over without a word. Probably not more than half a dozen other kings prior to the House of Bourbon get much attention. Bourbon misgovernment and its awful retribution are presented, and the contrast between the magnificence and the misery of the reign of Louis the Fourteenth, once seen, can no more be forgotten than can the terrible events of the Revolution. A class is always greatly interested in comparing the policy and fortunes of the House of Bourbon with those of the House of Stuart, and the careers of Cromwell and Napoleon are also looked at side by side. The unstable character of French government during the present century, the Franco-Prussian war, the French Academy and some of the best known authors of the day, and a little of the present political situation in France are discussed. It was only a fortnight ago that the class were talking of the possible re-election next November of the President whose life has since ended by the dagger of the assassin.

In German history some classes learn very little before the establishment of the present empire, except what they get of the reign of Charles the Fifth and the Reformation and of the writings of Goethe and Schiller. Others have time for a good deal of Teutonic mythology; of the romantic age of the Hohenstaufen with its crusaders, minnesingers and cathedral builders; of the Hanseatic League; and of the most important events in the history of the House of Hapsburgh. The establishment of the present empire and something of its government are always studied.

A catalogue like this becomes too tiresome to be endured, and we will omit reference to the little that we do with other modern nations, merely saying that whether a class is bright or

stupid we propose that it shall know something of the history which is in the process of making, and is recorded in the columns of the daily press. A lesson from some periodical is as much a part of each day's work as is one from the arithmetic. If the newspaper happens to contain nothing of moment, something of literary interest can always be found in a magazine. A course in history and literature would certainly be very defective which concerned itself only with by-gone years and failed to connect the dead past with the living world of to-day.

This, in brief, is what we try to do with general history and literature. And now arises the inevitable question by the answer to which all work must be judged, the question of the child to his grandfather at the end of the battle—

> "And what good came of it at last?
> Quoth little Peterkin—"

Like little Peterkin's venerable relative, we do not find it the easiest thing in the world to tell. In hours of discouragement, the contrast between the things that we have done and the things that we have left undone is so depressing that it seems as if we had accomplished absolutely nothing. It is a more inspiring, and so perhaps a wiser way, to look at it from another point of view, and instead of comparing the little our pupils have acquired with all there is to know, to compare it with total ignorance of these subjects. When we consider the knowledge which at the end of their course they really have of the contributions made by the different nations to the common stock of what are to-day the world's most precious possessions; of some of the men who in each age "have shown in a wondrous way"; of the thoughts they have thought and the deeds they have done; in short, when we think how their conception of human life has been broadened by all they have learned from history of what man has been, and from poety of what he has dreamed that he might be, we feel that our labor has not been wholly in vain. It is, moreover, our abiding faith that the return is greater than it would have been from the same amount of labor in any other field.

There are those who decry the teaching of history and literature in our schools beyond certain narrow bounds as "unpractical." They say—and certainly nobody would deny it—that the limited education which we give our children should concern itself exclusively with what will furnish them the best

equipment for life. They also say that a knowledge of ancient Greek or mediæval Germany is no part of such equipment. But can one be so entirely sure of the latter assertion? It is easy enough to affirm that the most practical, and so most desirable education consists in a knowledge of the things about us, things that we can see or can bring within the range of our vision with telescopes or microscopes, but it might be a little more difficult to show conclusively wherein lies the superior excellence of such knowledge. Is the mind's eye, then, a mere fiction of the poets? The object lessons of nature are curious and beautiful but does it unquestionably follow that they are the very most valuable of the many courses offered in the great school of life; or is there here, also, something of the distinction made by the Apostle—"for the things which are seen are temporal, but the things which are not seen are eternal"?

The truth is that a great deal of what a child learns even of the things around him has no practical worth whatever. There is no question of direct and immediate utility in a very large proportion of all our teaching outside that invaluable annex to our schools, we might almost call it our better half, our industrial department. It is the secondary and not the primary result that we prize. In one of his felicitous sentences Matthew Arnold somewhere defines the aim in education to be "an inward spiritual activity, having for its characters increased sweetness, increased light, increased life, increased sympathy." Is not that exactly what we seek? An apprehension of any of the great truths either of the external world or of the life of man will, indeed, conduce in some degree to this desirable end, but the nutritive quality of different kinds of knowledge, varies as greatly as does that of different kinds of food. The table which we set out before our children must be scanty at the best. We cannot give them many courses. It remains for us to decide whether there is anything else to be had in a schoolroom, outside the personal influence of the teacher, one half so well calculated to develop a child into a man as is the study of the lives of other men. To all of us who deal with advanced classes comes the question, Shall these children, with their pitifully small store of language, and of the knowledge of human existence which comes only through a certain familiarity with literature, be set to study the technicalities of science, into which

only a *very* few of them will ever get such an insight as will give any particular charm to life; or shall we be doing infinitely more for the great majority by laying the emphasis in our teaching as Carlyle does in his remark, "These young obscure years ought to be increasingly employed in gaining a knowledge of things worth knowing, especially of heroic human souls worth knowing"?

The question of relative values, however, is no part of our theme, but as all roads lead to Rome so to lovers of history,—and by the word history we mean now the record of man's achievements whether found in chronicle, song, or story,—all discussions of ways and means lead back to the dominant idea of the exceeding benefit to be derived from this study. Upon this point one could never say the hundredth part of what he feels, but this paper already exceeds its intended limits and it shall close with only one sentence more, which shall be from a writer to whom we are never too tired to listen, and who brings this very subject before us in that inimitable style of his which is a never-failing source of delight—"So long as we have human hearts and await human destinies, so long as we are alive to the pathos, the dignity, the comedy of human life; so long shall we continue to rank above the philosopher, higher than the politician, the great artist, be he called dramatist or historian, who makes us conscious of the divine movement of events, and of our fathers who went before us."

ORAL WORK PREPARATORY TO INSTRUCTION IN GEOGRAPHY

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MASSACHUSETTS.

ORAL WORK PREPARATORY TO INSTRUCTION IN GEOGRAPHY.

Our present plan of work provides that during the last *two* years of its course each *Primary* School class shall spend one hour a day on Geography.

The work is arranged with the intention of giving the class a practical all around knowledge of the world, such as a hearing child acquires naturally, from the conversation he overhears, the answers to his questions, and the picture and story books which are put into his hands. As detailed information of any one section of country is not at all what is desired, no printed text book, however simple, would serve our purpose.

The lessons are given orally and are really conversations in which the teacher tells the simplest facts to an astonished audience, who, in their turn, aid her constantly in determining the direction which these talks shall take, by their surprised exclamations, their questions and misstatements.

One need but pronounce the word "city" to children who have heard for eight or nine years, for them to form in their minds a picture of a large number of houses, stores and churches, and busy people hurrying through the streets, while to the deaf child of the same age the word conveys no meaning whatever, and the name of any city would form no definition for the term, for "Northampton," in all probability means to him the identical spot on the top of Round Hill where his father leaves him the third week in September.

The streets and stores are to him "down town," the ocean, if he is so fortunate as to know it as water at all, is likely, in his opinion, to be as wide as the *river* he *knows*, and possibly as deep as the house is high—but *that* is a stretch of imagination.

It is to meet the needs of minds wholly lacking in ways like these,—the usual store of child knowledge,—that our preparatory Geography work is intended.

In all our lessons every possible aid to the imagination is

put to good use. Pictures are constantly in demand and books of stories, moulding pans, maps and toys are all made to lend us their aid.

We begin our work by giving the class the power to understand and use what is to them an entirely new means of representation—a plan. This we do by drawing together plans, first of things near at hand, such as the schoolroom table, the schoolroom itself, the other classrooms, and, later on, the grounds and buildings and then the least difficult and most familiar parts of the town.

The children are not required to take the measurements or do the more difficult drawings independently, and often are only asked to indicate the direction which the lines should take while the teacher makes the plan. This is all that seems necessary, as the only end in view is to have the child see that a large surface may be represented by a small drawing in the right proportion.

The next step—the development of the idea of a city—is usually given by the use of a box of toy houses, churches, stores etc. With these we build a city and a village on our schoolroom floor and teach the class to appreciate the difference. Beginning with our own city and locating others familiar to the children by name at least, and talking of what we see—fields, rivers, trees and mountains—as we ride to them in the cars, we can soon venture to draw around these cities the outline of our state, and have a right to expect that to the class the word "State" will suggest a large extent of country with fields and trees and villages and cities in it.

Only a few states are taught, and those not until some picture of something of interest in them has been given to the children.

If a deaf child wishes to know how far away any place is, he invariably asks, "How many days?" meaning to found his judgement of the distance upon the time taken to reach the place. And so using the child's own weapons, we give him his idea of distance by telling him how many hours or days it would take to travel from one place to another. The map of Massachusetts in the moulding-board is very small, but Massachusetts itself—why!—it takes three hours to go from Northampton to Boston.

After a few states are learned we will try stretching the child's imagination over our country. A few pictures of features of interest in several large cities, and a simple account of the six days of travel through valleys, past cities and over mountains to San Francisco will give some idea of the extent of this country.

The difference in climate and general physical features and the different life of the children in the other countries of North America will serve to give the class some mental picture of those countries—and then we have a continent.

Only the most striking characteristics of the different continents are given at this period in the work. These are followed by a few lessons on the oceans and on climate.

For the sake of giving the class a vivid picture of the different climates, the teacher moulds the continents, and after putting in the water for the oceans, covers the land in the tropics with plants and bright flowers. Icebergs and ice-floes in the cold oceans and snow in the Arctic regions complete the picture.

The natural divisions of land and water are taught by the use of sand in moulding pans. While we are thus acquiring as rapidly as possible this very simple idea of the world, we must stop to learn the points of the compass, for we need to know something of direction as soon as we begin to learn cities. The cardinal and semi-cardinal points are taught with compass in hand so that each child may see the needle come to rest. The two different forms of the question "Where?"—"In which part of?" and "Which way from?" are carefully taught and then we may wander over the face of the earth at will, armed with just enough knowledge to enable us to locate anything of which we may wish to talk.

As soon as the child has gained in this way a crude idea of the world as a whole, we tell him first of its animal and plant life and later of its people. A class of this age will have almost no knowledge of natural products either vegetable, animal or mineral.

Taking first the vegetable products, we set the child at work upon a line of investigation as interesting as it is new to him. The different dishes served at dinner will do very well as a starting point for the study of the food products. The history of the contents of the sugar-bowl and salt and pepper boxes can be made very fascinating to the childish mind. The simpler processes through which the product is put, before it

is ready for use, can generally be given, and always the product itself is located in its native country or section. In this way the pupil easily acquires the names and positions and principal productions of a great many countries.

It takes but a short time to arouse the child's interest and awaken him to the fact that every article of food, clothing, or furniture has its story, and in a little while the two most common questions from the class will be, "What is this made of?" and "Where did it come from?" It seems best often in this work to make no attempt to follow a plan for a day's lesson, but to allow the inquiries of the class to determine what the lessons shall be. As a review of this work the children are assisted in arranging the plants and animals of which they have learned according to their proper climatic distribution.

Having filled our world with plants and animals, we proceed to do what is still more interesting to the pupils, we people it with children. Making the simplest possible distinction between the peoples, that of color, we give the class stories of the five races. As soon as the home of the child introduced in our story is given, the pupil is able to decide very accurately what plants and animals his new acquaintance sees about his home. Miss Andrews' "Seven Little Sisters," and "Little Folks of Other Lands," by Fannie Chaplin and Mrs. F. A. Humphrey, furnish us with stories for all except the Indian. Much as the children enjoy these stories, their greatest delight is the account of the childhood of Hiawatha. It gives them such a dignified and grown-up feeling to be able to get the greater part of this story from the same book which older people read, and enjoy, and even the dullest classes can readily be made to understand such a simple passage as :—

> "Then the little Hiawatha
> Learned of every bird its language,
> Learned their names and all their secrets,
> How they built their nests in summer,
> Where they hid themselves in winter,
> Talked with them whene'er he met them,
> Called them 'Hiawatha's Chickens.'"

Being already familiar with the animals which the little Indian knew they take very readily this paragraph about them:—

> "Of all beasts he learned the language,
> Learned their names and all their secrets,
> How the beavers built their lodges,
> Where the squirrels hid their acorns,

How the reindeer ran so swiftly,
Why the rabbit was so timid,
Talked with them whene'er he met them,
Called them 'Hiawatha's Brothers.'"

The poet's own description of Hiawatha's bow and arrow, and the first red deer shot by him, of his deer-skin cloak and birch bark canoe, are as simple as it would be possible to make them.

Through these stories the attention of the pupil is called to the differences in surroundings, dress, home and amusements of the children and the occupations of their parents.

The last year's work deals with the countries of the different continents. It is almost impossible to give a detailed account of work that has to be so very general. The object of this year's work is not to teach the longest rivers, highest mountains, or productions of any country, but to give the child a general knowledge of the differences in government, some little notion of laws, of the pomp of royalty, of the power of armies and navies, an idea of the difference in languages and ages of the nations and perhaps more important than all, the knowledge that each nation has a history which is filled with stories of unspeakable interest to all of us. The pupil must get some acquaintance with current events and learn to appreciate the fact that things of interest are constantly happening in other countries and that through the newspapers he may gain some knowledge of them.

This may sound like a formidable undertaking, and so it would be if we attempted to give more than the veriest child's idea of all these things.

Up to this point in the work we have dealt only with the natural conditions of state and country, but now the class must be led to consider a country from a political point of view. Suppose we take our own country first. The child has never heard of government or laws, but he has a little practical knowledge that will help him to understand a simple lesson on this subject. He knows well some rules of the school and the Ten Commandments, and with this little store of information as a basis of work, it is not very difficult to give the pupil a sufficiently clear idea of laws, so that he may be told some city ordinance and a few state and national laws. After a little explanation of how these laws are made, we have a fair foundation for any work we may wish to do on government.

From its previous training the class will be able to decide almost entirely without aid what the natural productions of the country are, and from these we turn to notice the commerce and manufactures, the fine harbors upon which great cities have been built and the favorable conditions which have led to the growth of large manufacturing cities. Then merchant ships and our extensive lines of railroad will call for our attention for a lesson or two.

By far the most interesting parts of this work, to the child, are those which give him glimpses, however faint, of the people and the history of a country. He sees pictures of the negroes working on the plantations of the south and is more than eager to hear the story of how they came to this country, and is almost breathless with interest over a simple account of the civil war. He has already had just a look at this country as the hunting ground of the Indian, in his story of Hiawatha, and long before this has been told the history connected with Thanksgiving Day, so he is quite ready for a short account of the early settlers and a little story of the Revolution, and very glad of an introduction to armies and navies. While carefully considering our own country we will make innumerable references to other countries, always locating a new one as soon as it is mentioned, and giving the pupil some picture to help him remember it. For instance when we read the story of the little Eskimo girl, it takes but a moment to tell how that country in which her home is, was purchased by the United States from Russia, and but a moment more to show from our maps how the whole great country of Russia and Siberia stretches across Europe and Asia almost to our Alaskan Territory. And the fact told in this connection will not be easily or quickly forgotten. So we keep an advance guard of statements before us which prevents the class from feeling like entire strangers in the new countries to which we shall take them later on.

Our first European country and our first kingdom, is England. We have so often referred to her in our previous lessons, that by the time we are ready to give her our undivided attention, we have learned not a few of the most important facts concerning her. We have discovered that she has a navy, for there have been items in our newspapers about her war ships. We know already that her capital is the largest city in the world and that the Dominion of Canada and some of the West Indies

belong to this small country across the ocean. However, there is one thing which other children understand very well, of which our little people have no notion whatever, and that is what it means to be a queen. Their limited understanding of language has prevented them from sharing the delight of every hearing child's heart—fairy stories of kings and queens and princes and princesses, and no deaf child ever dreamed of playing at being a queen or a king.

In this dilemma there is no help like pictures,—pictures of the queen in her court costumes guarded by soldiers and with pages bearing her train—and pictures of her magnificent residences, both exterior and interior. When once the pupils have become acquainted with her Majesty, they never weary of watching for her name in the newspapers and following her movements from Windsor Castle to town or Balmoral Castle or wherever she may chance to go.

Once they have gotten some feeling of the magnificence of royalty, they are capable of unlimited interest in the little King of Spain or the fourteen-year-old Queen of the Netherlands.

A picture of the Queen's coronation will give the children an interest in Westminster Abbey. A child may forget a picture of the Tower of London, and probably will if he is told only that it is a prison, but let him read, or tell him, the sad story of little Edward V. and the Tower of London will never be forgotten.

The story of "English Ethel" in *Our Little Folks of Other Lands* will make the children familiar with the parks and the child life of London, and *Our Little Men and Maidens* gives us a nicely colored picture of a sturdy English boy and a simple little rhyme describing him and telling of his bravery and honesty. This little book contains bright colored plates of a number of children in their different national costumes and the accompanying verses often have in them a few words of the language of the nation to which the child belongs. This proves a source of great pleasure to the children.

The story of the "Highland Lassie" covers nearly all our work on Scotland.

Not infrequently a newspaper item forms the subject of our hour's talk. It may be a reference to the railroad across Siberia or some mention of the Manchester ship canal or some item of

news from Japan or India. And so our work goes on, touching first one country and then another, with here a story and there a news item, and pictures everywhere and always, until London is to the class, not a dot on the map, but a great city some of whose buildings and people they really know, and China is not simply a pink country in Asia, but a great extent of land with mountains, valleys and rivers, with tea farms and rice plantations and odd houses and strange people in whose habits and customs they have a keen interest.

Perhaps there is no fairer way to show the general work of the class than to read in closing some questions from the written test given them at the close of the last term:—

1. In what country do you live?
   On what continent?
   In which climate?
2. What mountain range is in the eastern part of North America?
   What one is in the western part of North America?
3. What is the longest river in North America?
   What is the highest mountain?
4. In which part of the United States are the most large manufacturing cities?
   From which part do we get much lumber?
5. Who discovered North America?
   From what country did he sail?
6. What is the largest city in the world?
   Of what country is it the capital?
7. What has England instead of Congress?
   What are the occupations of the English?
8. What pretty pink flower grows in Scotland?
   What is the capital of Scotland?
9. Where is the best linen made?
   Of what is it made?
10. Who is the President of France?
    Tell me something about Paris.
11. What is the highest point of the Alps?
12. What are the occupations of the Swiss?
13. What are the productions of Russia?
14. Who is the ruler of Russia?
    What country of Asia belongs to Russia?
15. What does the Czar do with people who displease him?
    Where are the Russians building a railroad?

16. How old is the King of Spain?
    What is his name?

17. To what country does Gibraltar belong?
    Where is it?

18. Where is the largest church in the world?
    What is it?

19. Who is the Pope?

20. Tell me the productions of Italy?
    What is the capital?

21. On what is Venice built?
    In what do the people go about?

22. Why are there dykes around Holland?
    What are there through the streets?

23. What country of Asia belongs to England?
    What country of North America belongs to England?
    What city of China belongs to England?
    What continent belongs to England?

24. Are there many horses in Japan?
    How are their jinrickishas drawn?
    Tell me about the children's holidays?

25. Where is the Great Wall of China?
    Where is the Suez Canal?
    What nation tried to cut a canal across the Isthmus of Panama?

Class Averages:—

95, 93, 92, 88, 88, 87, 81, 55, 51.

VI. 7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

EXPERIENCES IN LIP-READING

BY

MR. S. G. DAVIDSON,

EXPERIENCES OF A SPEECH-READER

BY

MRS. SYLVIA C. BALIS,

AND

MY EXPERIENCE IN PUBLIC SCHOOLS

BY

MRS. L. M. SANDERS.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

EXPERIENCES IN LIP-READING

BY

MR. S. G. DAVIDSON

OF THE

PENNSYLVANIA INSTITUTION FOR THE DEAF,

MT. AIRY, PA.

HARVARD COLLEGE
JUN 25 1897
LIBRARY.

EXPERIENCES IN LIP-READING.

"*Experientia docet.*" We may theorize and argue until the day of doom and little will come of it. Our theories are like so many boats, our arguments the waters on which they float, and we their passengers. Up and down our little craft bob among the ripples of debate until along comes a mighty wave and the one in its course shoots high above its neighbors, which, in the agitation occasioned, pull at their anchor lines and clash against one another with much noise, some scraping of sides, and knocking of heads among their occupants; but the wave passes on and the exalted one falls to the common level and no longer attracts our attention, which turns in a different direction where another little boat is rising towards the sky — another theory coming into prominence. And so we go, up and down, up and down, until there comes a calm and we find we are all just where we were at the beginning. It is but very rarely that one of our theories drags its anchor and goes to pieces among the breakers.

But experience teaches, convinces. When we have seen a thing done we no longer question the possibility of doing it. Faith in the teaching of speech to the deaf is growing, not because of the arguments advanced in its favor, able though many of them have been, but owing to the increased opportunities for observing the results of the work afforded by these meetings of the American Association, at each of which pupils and graduates of oral schools have been present. Doubtless many a teacher, previously skeptical of the practical value of such powers of speech and speech-reading as the deaf might acquire, has returned to his school, after attending one of these conventions, either convinced by the accomplishments of the deaf children and adults encountered at the meetings, or with his interest aroused to a thorough investigation of the subject.

But even here we cannot witness a full demonstration of the value of speech and speech-reading to the adult deaf. For

that it is necessary to see them in their homes, at work, and in society. As it is possible for but few of us to do that, I would suggest the advisability of the Association appointing a commission to do the work for us and to make public the results of their investigations. I am convinced that such an undertaking would result in a great extension of the teaching of speech to the deaf.

I have been requested to give my own experiences in lip-reading and those of other deaf persons who make use of it habitually.

I grew gradually deaf from my ninth year, but continued in the public schools until thirteen, when I entered the Pennsylvania school for the deaf. There the attempt was made to teach me to read the lips, I being with an articulation teacher for an hour each day. I made no progress to speak of. Notwithstanding, or because of, this failure, I believed in oral instruction for a part of the deaf, for I argued that if with so little practice one could read the most difficult sentence from the lips after ten attempts, he could, with ten times as much practice, read it at the *first* attempt.

I never met a really good lip-reader until four years ago. In 1890 I attended the convention of American Instructors of the Deaf, at the New York School. At one of the sessions, the question of oral instruction came up. My faith in speech teaching had grown somewhat weak from the attacks made on it, and it was not strengthened by what I there heard. Passing out of the hall I encountered a friend who offered to introduce me to a young lady, which he did by speaking to her and spelling to me with the finger alphabet. After some general remarks, my new acquaintance and I launched into a discussion of the debate which had just taken place in the assembly hall, I by voice, she by spelling, awkwardly, after the manner of one not accustomed to the manual alphabet. She was enthusiastically in favor of the oral method, I opposed it with all the stock arguments. Finally I remarked, as a settler, "Your theories are very fine; I used to think just so myself; but the facts are against you. I do not know a single oral school graduate who amounts to a snap of the fingers,"—suiting the action to the words. She flushed hotly, and replied; "But *I* do." "Who may they be?" I asked, surprised at the feeling shown, and beginning to suspect she might herself be a teacher in some oral

school, although there was nothing of the air of the schoolma'am about her. She mentioned several names I had never before heard. "Who are they?" I inquired. "They were my classmates." "Your classmates! Where?" "At Northampton." "What were *you* doing at Northampton?" "Studying." "Perhaps you will be telling me next that you are deaf," I said, to keep up the supposed jest. "So I am." "You don't mean it?" "Certainly, I am as deaf as you are."

Imagine my embarrassment. *Here* was a woman scorned. I had told her she didn't amount to a snap of the fingers. I could not do less than endeavor, by my attentions during the remainder of the convention, to atone for my rudeness and—well, perhaps it don't belong to the story, but the natural consequence followed. We were married, and she has taught me lip-reading—and some other things.

Determined, now, to master lip-reading, I was astonished to find, after the many painful efforts I had previously made, how easy it was when gone about in the right way. The whole secret consists in being forced to depend upon it altogether, and in having constant practice. Within a couple of months I was able to read Mrs. Davidson's lips with so much ease that it was hardly ever necessary to repeat. It is now so easy and natural that when talking with her I often quite forget that either of us is deaf. I seem not to *see* the speech but to *hear* it, and frequently it is only by closing my eyes that I can convince myself that I do not. I recall we were once walking on the street and Mrs. Davidson exclaimed, on noticing the head-dress of a woman just in front of us, "What a pretty bonnet that is!" "Hush," I said, "you could be heard a square away!" "I was not making a sound, I was merely moving my lips," she replied, and a friend who was with us confirmed her statement. With me, where lip-reading is easy, the ocular impression made upon the mind is apparently translated into an auricular one, but where I have difficulty in the reading, I am conscious of an ocular effort. I should like to know if this is so with other deaf persons.

I am not an expert lip-reader. Many, I might say most, people have to repeat to me frequently, which is to be expected since my occupations have made it impossible for me to have much practice outside of my own home, but I would no more

be willing to give up this means of communication with Mrs. Davidson and our friends than any one of my listeners here would be to sacrifice his hearing.

When this subject was assigned me I addressed letters to a number of deaf persons who, I knew, depended to some extent at least upon their lip-reading, requesting that they favor me with their experiences with it and their estimate of its value. The time was too short to make the inquiry an extended one, but I have here answers from representatives of all classes of deaf persons who have learned to read the lips. Among them are two that should be of special interest to the large class of people who have, in the prime of life, found themselves suddenly bereft of their hearing, and to those graduates of our schools for the deaf who have retained their speech but have never learned to read the lips. To the former they prove that their affliction need not necessarily interfere with their success in life; to the latter that it is still possible for them to acquire this valuable accomplishment.

The William Penn Charter School, in Philadelphia, is one of the largest and most famous preparatory schools in America. The Headmaster of the school, Richard M. Jones, M. A., is totally deaf. In reply to my inquiries he dictated a letter from which the following are extracts:—

"My not becoming deaf until some 35 years of age rendered it more difficult for me to learn lip-reading; but that any one should for a moment question not only the desirability but the feasibility of reading the lips is astounding to me. It appears to me to be the only course to take when one becomes deaf. You certainly don't want people lifting the roof every time they attempt to make you hear. Still less do you desire to ask people to hold under their noses a receptacle giving forth the concentration of all the bad breaths that have been talked into it for years. It is a deaf person's solemn duty to relieve his fellow-creatures of all the trouble possible in communicating with him, and at the same time render his own burden as light as possible.

"I did not begin immediately to learn my lesson. If I had done so it would have been of great advantage to me. I began the fool plan of holding my hand up to my ear and looking away from the person to whom I was talking. This is, of course, the most absurd performance (when you look at the whole subject) imaginable. The moment a person finds difficulty in hearing he should direct his eye to the features of the person with whom he is talking, and make a close study of the whole business.

"Results are sure to follow. Of course the younger one is the better, but nobody should despair. Heaven is not unkind to those whom it handicaps in the race of life. It is only those who have difficulties placed in their way that learn to overcome difficulties; and those who overcome difficulties like men win in life's race. Everybody likes to help a chap who is working manfully under difficulties; and life becomes easier at every step when one's resolution is entirely made up and his course fairly started on the right road. As regards my own progress in the art of lip-reading, I would say that without giving any very special attention to the matter, except as my necessities re-

quired, I have become able to converse with the vast majority of women and smooth-shaven men without any or very little difficulty. With men, however, with beards and women whose lip-movement is not normal, I have some difficulty. I think I shall overcome most of this in time. I would add that I place my sole dependence upon this method of communication. On rare occasions I resort to a pencil to help me out."

The other case referred to is that of Mr. S. M. Eddy who is employed in an Auburn, N. Y., bank and who lost his hearing at 29, from spinal fever. Learning by accident that it was possible to understand speech by the motions of the lips, he determined to master the art, and having secured an introduction to Mr. Westervelt, of the Rochester, N. Y., school, he attended, for some time, at irregular intervals, Miss Hamilton's classes. He says in his letter:—

"It [lip-reading] made life seem worth living and the examples I saw daily while there of pupils who never heard a sound reading sentences from the lips made me firmer in my determination to master lip-reading myself. I also had valuable help from my cousin in whose family I lived and who read to me from the newspapers sometimes an hour or two at a time, at first after I had first read over the article, and later without previous reading by me. I think this is the best practice possible for a person who, like myself, has a long experience with spoken and written language and much better than to try to read from the lips word by word.

"The one thing necessary to be a good lip-reader is to keep in constant practice. After being once acquired that is, I believe, all that is needed except cheek enough to force one's self a little forward when among speaking friends. The latter, I believe, is not only necessary but is excusable as many hearing people are totally lacking in knowledge of lip-reading and are slow to believe that it is a *real* and useful thing.

"In my family, which consists of my wife and little girl of seven years, my entire communication is by speech and lip-reading. I can and do understand them perfectly. It enables me to meet and converse with my own friends and those of my wife, though, as I have said before, it is hard to get many people on first acquaintance to enter into conversation with a deaf person; but I have many intimate friends with whom I can converse quite readily and understand them. I rely upon it in my business entirely and believe I can and do attend to the duties that devolve upon me as a bookkeeper in the Cayuga County Savings Bank as well as a hearing person could, and the fact that my salary has been increased twice since my hearing left me would indicate that the Bank management held the same opinion. I have also, for the last 14 years, carried on the most extensive steamship ticket and draft agency in the city and though I do not increase my business as much as I did for a number of years before I was deaf, I still, with a little occasional help from others in the bank, hold my own and a little more.

"Without lip-reading I might possibly have held the position I do but I do not think it would have been in a very satisfactory manner either to the bank or myself, as there are many things that it is a daily necessity for me to communicate with other employes of the bank about. That it has made life pleasanter there can be no doubt, as without it life to me would seem like solitary confinement."

Mr. Eddy relates the following experience in Chicago last summer:—

"As I was nearly ready for bed one evening, about 11 o'clock, at the University, a young man entered my room with a key and seemed quite surprised to find it occupied before him. I said to him, "I think you have gotten into the wrong

pew this time." He said, "No," and showed me his key which, sure enough, did have the right number on it. But I insisted that as I had occupied it for several days and my things were all there that there was a mistake somewhere and the young man finally took himself off. The next time I saw him was after breakfast in the morning, I then asked him if he had finally found a sleeping place and after several other remarks between us I asked him something about the Fair which he did not quite understand and we each discovered, for the first time, that the other was deaf."

Mr. James P. Burbank holds a responsible position with an engraving and printing company in Boston. He became deaf at six,. and was six years at the Clarke Institution. He is married to a woman who can hear. He writes that his intercourse with his family is altogether by speech and lip-reading, and that by means of it he is enabled to enjoy himself freely in the society of the hearing. Concerning its value in his business, he says:—

"I do not think I could successfully hold the position I occupy, or my previous one with Golding & Co., if I were not a lip-reader. I am accustomed to going around the city, on various matters of business for the firm, and very rarely have occasion to resort to pencil and paper. In fact, I do not carry them habitually as is the custom of most deaf people.

"The principal difficulty in my business life, and one which has operated as a barrier to my advancement, is the fact that it is impossible to read the lips of every one with whom I am brought in contact. When these difficult subjects happen to be customers of the firm, the result is embarrassing, and a stranger will occasionally blame them for not having a man better fitted to take his orders with the accompanying verbal explanations. Still, speaking from a business man's standpoint, I should judge that the ability to speak and read the lips added 25 per cent., at least, to the value of a deaf person to his employer."

He too has his little story illustrating how nearly lip-reading approaches to hearing, and how it frequently passes as such:—

"I was dining at a city restaurant with a deaf-mute friend—a fine looking man. I gave the order for both, but later on having occasion to consult my friend before giving an order, the waiter noticing our use of the manual alphabet, said to me in a sort of aside, 'Is that gentleman deaf? What a pity!' It never occurred to him that I might be deaf myself."

Mr. Daniel Nichols, of Lynn, Mass., runs a large steam laundry. He became deaf at ten years, and was at the Clarke Institution five years. His letter speaks for itself:—

"Yours of the 14th to hand. I showed it to Mr. Howes with whom I have been in business for the past eight years. He laughed at its contents and said, 'I guess the person who wrote this does not know you very well; if he had he never would have asked you if you could talk. As to your ability, you handle the help as well if not better than a hearing person.'

"I now have forty-one hands in my employ and have to do a great deal of talking to each one every day and can recall but very few instances when I have been unable to understand them or to make myself understood. There are several foreigners among them who do not speak very good English, but still I manage to understand them after a

little practice. At present I have Portuguese, French, Italian, and Irish, who speak broken English, and it was only a day or two ago that one of my men remarked to me, 'It is strange you can understand that Irish woman talk; I can't, and I can hear, too.' So you see my speech and lip-reading are great advantages to me in my business. Indeed, I do not know what I would do without them as few of these people can either read or write.

"Sunday, Walter and Hubert [oral school graduates] spent the day with me. The family had callers — in all there were six hearing people and we three deaf in the room. You should have been here. We took part in the general conversation just as well as if we could hear and I think a stranger would not have known we could not. I feel that it has been a great advantage to us all to be able to speak and read the lips, but much of its value depends upon the person. The one great trouble with many is a lack of confidence in their ability to understand and to be understood. I am very persistent, yet there are some people whom it is impossible to understand, as they make little or no motion with their lips and others do not open their teeth at all.

"The great advantage lip-reading has been to me was shown when I was trying to get into the Odd Fellows. There was some objection raised when I applied for membership on account of my deafness. I was advised to call and see Grand Master Hill, who was then a total stranger to me. I went and, as luck would have it, the Grand Secretary was in Mr. Hill's office. We were closeted there for two hours. Finally, to try me, Mr. Hill took up one of the lodge books and asked me to repeat after him, which I did. After that he sat down and wrote a note to the lodge saying, 'Although he is deaf with his ears, he can hear with his eyes and I see no reason why he should not be admitted to the Order.' Then followed a request for them to accept me which they did. I have been in the Order seven years and the Encampment five."

Mr. David C. Marr, of Boston, when asked what estimate he placed upon the ability of his daughter to speak and read the lips answered as follows:—

"Yours of the 19th inst. at hand and I most gladly give your inquiries the promptest attention possible. Regarding your first question as to what extent my daughter's lip-reading enables her to mingle with and hold social converse with people who have not been afflicted by loss of hearing, I will simply say that all her friends, with perhaps one or two exceptions, whom she seldom sees, and positively all her intimate associates, are those whose hearing is not affected. We have no difficulty, nor do her friends, in conversing with her, and notwithstanding the fact that she cannot hear the songs of birds nor the sweet strains of music, yet the need of them for her is felt more by her parents, sisters and friends than by herself. She is extremely cheerful and gets as much happiness out of life as any person. She teaches in Sunday-school at Christ Church, and is very intimate with our loved pastor and his wife, Mr. Babcock. Without the tuition given to her by those angels, the Misses Fuller and Jordan, her life would have been far less pleasant and happy.

"She became deaf as a consequence of scarlet fever at eleven years old and about the time that her deafness was known to be incurable, we sent her to the Horace Mann School where she stayed until the curriculum was exhausted. She then went out for competitive education, as advised. We sent her with her sisters and Mother to Quebec where she won the highest honors that materialized in medals and memorials of different kinds. I feel like paying a tribute to the Misses Fuller and Jordan, with whom she has made fast friends and on whom she looks as being, as I have called them, angels. I do not know what more I can say and I do not know the reason for the inquiries you make. Has some brute in human

shape attempted to destroy or injure the schools where deaf-mutes are taught to speak and understand spoken language and get their share of happiness out of life? If so, I feel like quoting from Burns,—

> " 'Inhuman man! Curse on thy barb'rous art,
> And blasted be thy murder-aiming eye;
> May never pity soothe thee with a sigh,
> Nor ever pleasure glad they cruel heart.' "

I have some hesitancy about quoting the latter part of this letter. I do not wish to be held responsible for the sentiment expressed, which cannot properly apply to those who conscientiously oppose oral instruction. I admit it, however, as emphasizing the value this father places upon his daughter's accomplishment.

Now we come to those who were born deaf or lost their hearing in early childhood. Is speech and speech-reading an almost useless accomplishment to them, or has it been of practical value in their relations with the world? They and their friends answer.

Mrs. A. M. Spencer of St. Paul, Minn., writes of her daughter, who became deaf when about a year and a half old and recently graduated at the Clarke Institution:—

"It is a pleasure to me to be allowed to acknowledge the satisfaction which my daughter's ability to converse orally is to both her and her friends.

"Since her first year at Northampton her conversation with the family has been wholly carried on by speech. She understands us all and any one else who will speak to her with a little care or whose lips are not concealed by a large moustache. She meets and converses with all guests of the family and has quite a large circle of young friends of her own. There are none of their pleasures but what she shares, excepting music. It is often difficult for persons who have known her a long time to realize that she does not hear at all.

"In shopping she relies altogether on her speech. When she sees people conversing by means of signs she watches them with as much curiosity as a hearing person might and it never occurs to her that her affliction is at all similar to theirs.

"Lip-reading has certainly made life easier and pleasanter for her, for it would be impossible for her to meet and entertain strangers as she does by any other means.

"Sometimes I have noticed a diffidence on the part of new acquaintances to begin conversation for fear that they might not be understood. In such cases she has learned to take the initiative by asking a few questions about places, books or the ever-present weather.

"Her lip-reading is such an every-day matter that I don't recall any instances of its being of special value.

"Last summer a schoolmate who had graduated in June from the Clarke Institution was spending a few days with her. The two girls were invited by a friend of the family to go to Fort Snelling. All returned reporting a very fine time and the deafness of the girls had been so slight an obstacle to their enjoyment that our friend said to me, 'Mrs. Spencer, don't you think if the girls would continue at that school in Northampton a while longer they would get so they could hear?' 'No,' I replied, 'you can't

educate the deaf to hear any more than you can the blind to see.' With some embarrassment he said, 'My remark must appear a very ignorant one, but it did seem as if they came so near to it that it would take very little more to make them hear.'

"Three years ago we sent our daughter to a girls' school in St. Paul for one year, where we requested that no favor be shown her on account of her deafness. She ranked well in her class.

"My husband had little confidence that our daughter could be taught by the oral method, but I urged that we try it for just one year. At the end of the year when he went to bring our little girl home he had not seen her five minutes before he decided that she should return the next year."

Mr. E. V. Groesbeck, of Albany, New York, writes of his son, who became deaf at six months:—

"His education was commenced just before he was five years old, and was continued until he was nearly ten, with the exception of one year. He was taught first by private oral teachers, and afterwards in Miss Black's school. During the years previous, we always talked to him, and he spoke several words before his first teacher came. He has always associated with the family and has been talked with and at all times made to feel that he was the same as the others. We have never turned him off, but have gladly talked with him and explained freely, when he did not comprehend. I think all this has helped him, as it now seems entirely natural for him to communicate with us orally. He knows nothing of signs or the manual alphabet. We have purposely kept these from him.

"At the age of ten, he entered the Albany Academy, a private school for boys. He spent two years in the Preparatory Department and has just finished his first year in the Academic Department. His instruction is entirely oral. His teachers are very much interested in him and have been very helpful to him. His record is very good. Indeed, he is among the first in his class. The class is composed of boys of about the same age and fully up to the average.

"He reads the lips very well and can understand almost any one if he can see their lips and they speak fairly well. His speech is good, and is easily understood by the family, and his friends. Strangers do not always understand him as well. He is not as careful in his enunciation as he should be, and some have thought that his progress in this respect is not satisfactory. He associates entirely with hearing people, is unembarrassed in his intercourse with them, and feels that this is the way for him to do.

"Recently he took part in the competitive drill of the Albany Academy Battalion and was the last one thrown out. The test was severe, and only three of the class he drilled with remained through the drill. He studies Latin, Arithmetic, Geography, History, etc. He cannot understand a general conversation nor follow preaching or lectures."

Miss Bertha Howes, of Cape Cod, Mass., was born deaf and was nine years at the Clarke School. I would direct attention to the correct language used by her and by the writers of some succeeding letters who were born deaf.

Miss Howes says:—

"I could not converse with my hearing friends were it not for my knowledge of lip-reading, which is my greatest blessing. Of course my conversation with the members of my own family is altogether by speech and lip-reading. I can understand all of them, even my niece (aged five years), with whom I have been able to converse ever since she learned to talk. In fact, I think I would be very stupid, indeed, if I could not understand them, they all speak so very plainly.

"I have several intimate friends among hearing people with whom I habitually converse by this means. I enjoy their society very much and they are all very kind to me but I doubt if I had been taught by the manual method that many of them would have taken the trouble to learn the manual alphabet or signs in order to converse with me, and I certainly would not be able to mingle with hearing people as freely as I do now. Indeed, my life would be so miserable I would go into an insane asylum in a short time if I lived on here where there are no other deaf people besides myself to associate with. I pity the manual-taught deaf living in such isolated places.

"I went to Captain Kelly's funeral the other day. I sat very near the minister and could understand nearly everything he said as he spoke very plainly. It seemed as if he thought of me, and turned his face so that I could see his lips, but perhaps he never thought of such a thing."

Mrs. Ware, of Worcester, Mass., writes that her daughter's deafness commenced before she was two years old. She was sent to Northampton when five, when she had lost all save a few home words. She says:—

"She meets and converses with all the guests of the family, but of course is unable to share in general conversation, because she does not know at whom to look when the one she has been looking at, ceases talking; thus you see she cannot carry it on. She does no shopping, because of her great shyness, and because I have always been with her, but she is fully able to do it. Indeed she does 'just like other girls' save that she is quieter. I cannot answer your last question concerning any instances in which the ability to speak or read the lips has been of special advantage to her, because she has always mingled with hearing people; she has no friends in the city and never has had, who are deaf, and therefore has always talked whenever any one talked with her, and instead of now and then some special advantage having been derived, her ability to talk has been one long continued advantage to her and to us, and a blessing for which we cannot express our gratitude.

"She was at Northampton twelve years, and words utterly fail to express my thoughts and feelings when I would write of the teachers whose pupil she has been; the result of whose system, whose patience and wisdom, kindness and loving sympathy through all these twelve years, has given to our daughter the blessing of speech. She graduated last year in the class of '93 and during the past year has attended a private school for young ladies in this city."

Mrs. M. M. Wordell, of Fall River, Mass., writes of her two daughters, Annie and Carrie, both of whom were born deaf and were educated at the Clarke Institution:—

"I hardly know how to commence to tell you what it [lip-reading] has done for Annie and Carrie, especially Annie.

"It has done wonders for both, but Annie goes about like a hearing person. She calls on our friends and her own. She mingles with people just the same as though she could hear. She surprises every one she meets. She talks very plainly. Her conversation with our guests and with all of the family is by that means. She has been in society all of the past winter, also in church work and charity work. She has many intimate friends with whom she always converses by this means. She never thinks of making signs to any one. Lip-reading surely has made life much pleasanter for both of our daughters. We notice a great improvement in their speech since they have been at home with us and have mingled with hearing people. Carrie does not talk as well as Annie, but she talks very nicely. She has not the confidence to go about and meet

with strangers that Annie has. But Carrie always converses with every one by means of speech and lip-reading, and she understands hearing people very well. She has not as many friends as Annie has. Annie has a great many and they tell me very often how well they can understand her.

"A friend of ours (whom Carrie has known only a short time but who loves her very dearly) told me that she could understand all of Carrie's conversation with her and that Carrie read her lips very well indeed. Annie gets along very nicely in shopping and she could do it all but many times we go together and I attend to it. She is very companionable and we enjoy going out together very much. She surely has grown and developed as she gave promise of doing when in school. Really she has surprised us in the way she converses and mingles with hearing people. If you could talk with some of our friends you would be assured that she has no trouble in conversing with them or they with her. In going away for the summer the ability to speak has been of great advantage to them, especially to Annie, in meeting strangers. She could talk intelligently with them and they understood her very well indeed. I remember of one instance while we were away in the summer where Annie was introduced to some people and they did not know that she could not hear until after she had conversed with them. We feel proud of the system and of Clarke Institute. The Principal is deserving of a great deal of praise. She is a noble woman and her life is with her work. The home influence is grand. The teachers all deserve great credit. They have worked wonderful things with ours."

Mr. Walter F. Morse of Concord, Mass., was born deaf. He writes:—

"You ask me to what extent my lip-reading enables me to mingle with hearing people. I would say I do not go out much in society, but enjoy myself in a quiet way with my family and friends, with occasionally an entertainment such as a whist party or a fair. Debating societies, lectures, concerts and brass bands I do not indulge in.

"My conversation with my home folks is purely oral. I understand every one of them and my speech and lip-reading enables me to meet and converse with their friends. I have quite a number of intimate hearing friends with whom I always converse by this means.

"In my business relations I find a great difference in people. I talk more than I write with those with whom I do the most business.

"I recall on several occasions while helping the carpenters at work on my father's house how readily they talked with me as they worked, while if I had used signs they would have been obliged to drop their tools every time they wished to speak to me.

"I have been deaf ever since I was ushered into this world. I was in school nine and a half years and since graduating have been in the steel engraving business.

"From my own experience I should say that all deaf people of ordinary intelligence can certainly learn to speak and to read the lips."

These are not exceptional cases. I have not presented more because there is not time for them. It would be possible if time for the necessary correspondence were allowed, to produce hundreds of letters of this character. But those I have read are sufficient to show that lip-reading is not a merely ornamental accomplishment of little or no practical value in the work-a-day lives of those who have acquired it. I do not claim they prove that all deaf-mutes can be taught to speak or read the

lips so well as these—that would be illogical. But the evidence is sufficient to prove that one never loses his hearing too old or too young to learn to read the lips, that the acquirement is an immense business and social advantage, and that our schools are justified, on the score of economy as well as of humanity, in exhausting every means to make it possible for every one of its pupils to learn speech and speech-reading. If their value as producers is thereby increased 25 per cent., as one of the correspondents quoted asserts, a school is certainly not extravagant if, in order to accomplish this end, it increases its expenditures five or ten per cent.

Some of these letters are also of value as showing that the orally taught deaf do not, as has been asserted, themselves repudiate the method, and the intelligence and good language displayed indicate, in their cases at least, their intellectual progress was not hindered by the way in which they were taught.

As the public becomes accustomed to the idea that many of the deaf can understand speech by the motions of the lips, it will be much easier for those who have learned to do it to get along. I have noticed a great change in Philadelphia of late. A few years ago if I were addressed by a stranger and said that I was deaf, he would, nine times out of ten, bend over and shout in my ear, and the tenth time he would turn and walk away. Now, in many instances, he will, without any suggestion from me, straighten up, push back his moustache, if he has one, and repeat deliberately and distinctly. This is probably the result of the frequent newspaper articles describing the work of this Association and of oral schools. That this education of the public should continue is very desirable.

DISCUSSION FOLLOWING MR. DAVIDSON'S PAPER.

DR. GORDON: In the *Annals* some years ago reference was made to the case of a lawyer, who, in the midst of his practice, lost his hearing, and was very much afraid he would lose his business and bread and butter. This lawyer, Mr. Lewis, of Tiffin, Ohio, acquired the art of lip-reading. He tells me that he not only addresses the court and conducts his own cases, examining, cross-examining the witnesses, and watching all the points made

by his adversaries, but says that he meets with no material difficulty in conducting his ordinary legal practice.

But the particular point of which I wish to speak is this: that, in reading the lips, he has learned not to concentrate his attention upon the lips at all, but looks into the eyes of the person whose lips he is supposed to be reading. By concentrating his gaze upon the eye, he reads better than he possibly could do if his eyes were fixed upon the lips.

MR. CROUTER: I am personally acquainted with the chartered school in Philadelphia to which Mr. Davidson referred in his paper. The gentleman referred to is a remarkable man in many respects, a man of great executive ability, a very distinguished educator. I called upon him, I think, sometime in May and requested his presence here at this meeting. He said he would be very glad to come, but he disliked very much to appear upon occasions of this kind, not because he does not believe in the teaching of the deaf to read lips and speak, but he dislikes to make a show of himself. I held a conversation with him through three quarters of an hour, (and do not recall that I repeated a word of the conversation) covering many topics of interest concerning his school and his work, and the way in which he communicated with people, wherein he stated that he had no difficulty whatever. He certainly had no difficulty in communicating with me.

I was astonished that a man who had never had what we might term expert training in lip-reading, had acquired the ability to read the lips with such perfection. He said he wanted it told from Maine to Oregon that it is possible for every deaf person to learn to read the lips.

I think our President, in visiting the schools during the past year, must have come upon many interesting cases, and I should like to hear from him.

DR. GILLETT: I had some very pleasant observations in the course of my visits during the last year. One in which I took especial pleasure has been alluded to this morning. Mr. Davidson has mentioned the case of the little son of Mr. Groesbeck of Albany. Being skeptical with regard to him, I decided that I would see this child for myself. So when I visited Miss Black's school, in Albany, I asked about this boy. She directed me to the Albany Academy, one of the oldest and most famous boys' schools in the country. There I met Miss Evans, the lady who

had been his teacher, who told me that in a class of 30, while he was not the best, he was above the average, and in some things was nearly the first. He had graduated from her department and had been sent to the academic department. There I found him engaged in a recitation in Latin. I told the Professor who I was, and my business, and that I wished to witness Ned Groesbeck's recitation without his knowing of my interest in him. The teacher gave me a seat on the platform, and said, "I will call Ned out pretty soon." He began calling up one pupil after another by name. "John, you rise and read such a page, and paragraph." "Thompson, you read thus and so." "Groesbeck, rise." He was in the middle of the room, and came up as promptly as if he were able to hear. He was watching very intently, and his eyes seemed to answer fully the purpose of ears. "Turn to such a page and read such a passage." The boy turned to the proper page, in the Latin Reader, and read the paragraph. He expressed it in good Latin. Presently the Professor, calling one after another, again named Groesbeck, who again responded as promptly as before. He gave him an entirely different exercise from that which the others of the class had had been engaged in,—a translation from Latin into English after reading the Latin. The little fellow did it as well as could be asked. Then others were called on, and as the Professor said, Ned did as well as any,—of whom there were twelve or fifteen sprightly hearing boys,—in the class. I then followed him to his recitation in physical geography, where he did his part in the recitation precisely as the others did, except that he required and was given a favorable point of view for seeing the teacher's lips.

I was much interested in the case of Abraham Fechheimer, who though he was born deaf, was attending the Cincinnati Manual Training School. Here he has passed through the blacksmithing and wood-working departments, and when I was there, was engaged in the machine shop. The foreman told me that he got along quite as well as any of the other boys, though the foreman himself who is a foreigner, and his utterance of English not perfect, told me he sometimes called on another boy to aid him in making Abraham understand. I was told that he did the work in the literary department quite as creditably as any of the hearing boys. He worked out a problem in algebra on the blackboard and gave an oral demonstration of it in the presence of the

school. The teacher in charge told me that he understood perfectly what Abraham said in the elucidation of this problem, and also that the members of his class followed him attentively and were accustomed to do so.

I was greatly interested in the case of Mrs. Weeden, of Providence, R. I. She told me that she lost her hearing so young in life that she retained the recollection of only one word, —key. Her mother determined that her daughter should not be dumb, and that she would give her life, if need be, to the cultivation of her power of speech and lip-reading. She now entertains and visits friends and enters into society with as much freedom and ease as any other lady. She is deeply interested in the school for the deaf in the city of Providence, R. I., and frequently visits the Legislature, doing such work as is necessary, in the interest of the school. in addressing committees, etc. She told me she had no difficulty at all in making the committees understand her.

I was interested in the case of Mrs. Hill, the wife of the principal of the West Virginia Institution for the Deaf. I am very sorry that she is not here as I expected. Her hearing was lost in girlhood, so that while she is now unable to hear, she has retained a pleasant, sweet voice, and natural fluent speech. Her deafness does not seem to have resulted in any detriment to her use of speech or any serious disability to understand speech addressed to her. I arrived at the school in the middle of the forenoon. At the dinner table, where there were a number of guests, I was introduced to this lady. She took her seat on the opposite side of the table, so that I had opportunity to talk to her and to observe her conversation with others, which was easy and natural and continued through the entire dinner hour without any occurrence to suggest a thought of her deafness. I noticed, however, that when her husband spoke to her he always turned his face to her, but I accounted for this as a peculiar personal attention which her husband courteously gave his very lovely wife. After passing from the dining-room, in conversation with the ladies of the household, one of them said, "Didn't you know that Mrs. Hill is deaf? She is, she doesn't hear at all." We presently passed up to the parlor, where I enjoyed an hour and a half of delightful conversation with her. After leaving the parlor I thought whether the ladies could have planned to play a joke on me, and decided not to

have the laugh upon myself if I could help it. So in the evening when an opportunity for further conversation with Mrs. Hill occurred, I simply moved my lips, without using voice, but otherwise acted naturally, but she failed to detect the absence of my voice and understood my silent communication perfectly. Mrs. Hill's case is truly an extraordinary one.

PROF. GORDON: Mr. Charles Ely, of Washington, who is sitting near me, tells me that he has known Mrs. Hill since his early childhood, and that he did not until this moment know that she was deaf.

DR. GILLETT: Mr. James Simpson, the Superintendent of the South Dakota Institution for the Deaf, is another remarkable lip-reader. Mr. Simpson was born deaf, as were also his brother and sister. His management of the institution of which he has charge has been as successful as that of any superintendent I know of. His means of communication with business men, and with the world at large, is entirely upon the basis of speech and lip-reading.

Mr. Simpson told me that if by any accident he should lose his ability to understand the speech of others and to speak himself, he did not feel that he could continue the superintendency of his institution, but he would feel obliged to resign its charge. Mr. Simpson communicates with the parents of his pupils through speech, and in his management of the institution never uses any signs with the hearing members of his household; though he may with the deaf. But with the world at large, and with society, he demeans himself as any other man would, and is a most successful business man. He not only manages his institution well, as a public officer, but also successfully manages farms of his own, so that he has accumulated a larger property than any hearing man occupying a similar position has been able to do, so far as I know.

I have been impressed also by some painful facts. I have in my mind one incident that was distressing. A young lady whom I have known for years to have a pleasant voice, who will not speak. I one day said to her, "Why do you not speak? You have a good voice." She said, "O, I am so ashamed that I cannot," and when I asked her, "Why can't you?" the reply was, "When I was in school my teacher told me that my voice

sounded like the squealing of a pig, and from that day to this I have refused to speak." Now I say that that was a crime. (Applause.)

Impress upon the mind of any child, and particularly upon a sensitive girl, the thought that she has some disagreeable defect, and it will be a blot on her life, which she will carry as a burden to her grave. I have no doubt that this beautiful young lady has labored under strong embarrassment and pain, and with all the years to come, under the conviction that she is a "disagreeable person." How often do you find children retiring and diffident, and for what reason? Because it has been impressed on their minds in their early life, "I must not mingle with people; I must not exhibit myself"; and they live unhappy and miserable ever afterwards. We must be more careful. Tell our pupils that their voices are pleasant. Every child's voice is pleasant to its mother and father, and it is pleasant to a friend or the teacher who loves it. I have said a great many times at the different schools, as I have gone around talking to the young men and women and children, "No *gentleman* and no *lady* will laugh at you, no one will but the coarse, vulgar boor, and you need care no more for him than for the dog that barks at you in the street." Impress that upon the minds of your pupils. Have no regard for any one who will find amusement in making fun of you because you are deaf. (Applause.)

I have here a very interesting letter in regard to a little girl,—not a pupil of an oral school. There are schools where signs are used that do good speech work (applause), I have seen some just as good work that has come out of schools that use signs as any that comes from oral schools. Nobody need feel in any way discouraged. Here is the letter:—

MORGAN PARK, ILLINOIS,
June 30, 1894.

DEAR DR. GILLETT: In view of my daughter's somewhat unusual experience during the past year I have thought it well to lay before you a statement of the facts of her case.

Maude went to your Institution in September 1886, being at the time six and a half years old and having been entirely deaf since the age of three months. She remained at Jacksonville seven years, making satisfactory progress in her studies, and being instructed in speech and lip-reading. When she came home last summer for the usual vacation, I made arrangements with Miss Josephine Lackore, Principal of the Morgan Park Public Schools, for private instruction for Maude with a view to placing her in the public school in September if it should be found practicable. Though Miss Lackore had had no previous experience in this class of work she succeeded so well that Maude was able to enter the sixth grade of the school in

September, and to secure the rank indicated in the report which I enclose herewith. During the first month of school she ranked sixth but made steady improvement and her averages for the year entitled her to the first rank for the year in a class of twenty-seven pupils. Her teacher Miss Eames is not acquainted with signs nor even with the manual alphabet, and Maude has taken her work in exactly the same way as the hearing pupils of the class; viz., namely from the lips in so far as the whole work of the class was not written. Further, Maude has not had nor has she required a single hour of her teacher's time out of school, or any more of it in school than has been devoted to the best of the other pupils in the class. The good that has resulted to the girl from this, and from contact with hearing children is beyond calculation.

For the progress made and the work that has been possible we are grateful beyond expression to you for the faithful foundation building under your kind and wise care.

Sincerely yours,

WM. H. GERMAN.

DR. GILLETT: I think that pays for the work of a life-time. (Applause). She stood 98 in spelling, 97 in arithmetic, 95 in geography, 92 in grammar, 92 in physical geography, 96 in drawing, 95 in her school average. Her attendance 100, 27 pupils in the class, and her rank No. 1.

Now we do not know how many of our pupils can succeed until we try. It was declared at the California Convention that it is our duty to give every one an earnest trial.

EXPERIENCES OF A SPEECH-READER

BY

MRS. SYLVIA C. BALIS

OF THE

BELLEVILLE SCHOOL FOR THE DEAF,

ONT., CANADA.

EXPERIENCES OF A SPEECH-READER.

I have lived, now, for twenty-two years, in a world that has been in all that time as silent to me, as the grave will be to you when life's duties are ended. Four days before the illness which deprived me of hearing, I took part in a large concert. Since then, music has never reached me, though heart and brain teem with it often, in degree varying from the martial strains of grand old war music to the musical twitter of the birds. No voices have penetrated the silence, not even my own, yet the air is full of them to me, from the rustle of the leaves in the spring-time to the clash of thunder and the sullen roar of the hurricane.

Yet dominating them all sometimes, is the last sound that ever reached my consciousness, the clang of the school bell for morning recess. And often but the sight of a bell will set it to ringing with a loudness and a persistency that would deafen anyone not already as deaf as I am. The reading of Poe's "Bell's" awakens the echoes in memory's halls in a manner inconceivable to one who has not experienced the sensation. Yet I could not now reproduce any of the numerous sounds that torment me, though I was once able to imitate a great many of them very closely.

The fact of my hopeless deafness, was kept from me as long as it was possible. This was rendered easier as I had learned to read writing readily before the illness which deprived me of hearing. Also to a fact not much thought of by any of us at the time, I had acquired a habit of reading lips, partly as a result of attempts to break the rule against talking in school without being caught, and a trick a cousin and I had acquired of puzzling our less acute playmates by communicating affairs to one another without sound of voice. So the reading of lips was a natural transition for me when the need came. Yet the knowledge of my deafness when it finally was forced upon me was the most terrible blow of my life, and I begged and implored that I be allowed to die.

In course of time I returned to school for a few weeks, but the teacher could do little for me. I had developed a great shrinking and sensitiveness and a roomful of children many of whom would laugh at my unconscious mistakes, amusing I have no doubt they were, only increased the trouble. I gradually ceased to talk, and finally refused to go to school. Then began my life among books. A private governess next tried to instruct me. She was repellant to me and improvement was, naturally, not great. All this time I mingled freely among my intimates and family friends and enjoyed myself as well as one could under the circumstances. But my refusal to speak freely began to bear fruit in a weakness of voice, and a mispronunciation of words, when I did deign to utter anything.

About this time my parents were visiting Dr. Aaron L. Chapin, of Beloit, Wis., and mention was made of me. The doctor having been long connected with the education of the deaf advised sending me to Jacksonville. You, who have never been placed suddenly in a community of strange people whose language you do not comprehend and whose earnest gesticulations not being understood nearly scare you out of your wits, while homesickness seems to gnaw at your very vitals, can never know what agonies I endured. For the poor, helpless, broken-hearted little ones who enter our schools every year, I have the tenderest sympathy and greatest compassion. I am going to be quite candid with you, I do not think I learned much articulation while at school, but I did learn at the very start that I ended each sentence with "ah." That knowledge came as near closing my lips once and for all time as anything that ever has occurred to me since, for it was conveyed to me in the form of ridicule. I also learned Bell's symbols which I speedily forgot again, at this day I can tell you two, 𐑯 and 𐑥, but which is n, and which is m, you will need to tell me.

I do not think I improved much the first year,—not until vacation, then I had so much to tell the home folks that I quite forgot my disinclination for oral effort and kept up a perfect stream of chatter. And I returned to school with as much to tell my teachers, and proceeded to tell them, particularly those of the academical classes and Dr. Gillett. They never laughed at me and always encouraged and drew me out. I never could tolerate interruption when excited, so they would

wait until I had finished my statements to correct me. I fancy it must often have been pretty hard to keep a straight face.

One of the bugbears of my school life was being so frequently called upon to speak to strangers, in fact, being exhibited as a curiosity, I never felt there was anything remarkable in the ability to speak, seeing I had always possessed it. Then my dearth of conversational topics with strangers was deplorable. I remember one instance where a gentleman was introduced, or rather, I to the gentleman, and then ordered to "talk." That most effectually struck me dumb. Finally I summoned up presence of mind enough to ask him if he had any children. "Three"—he answered.

A painful pause followed, which a teacher who stood back of him but facing me, proceeded to fill by telling me in pantomime, to ask him how he liked them. I did so, and the conversation ended then and there, amid great glee on the part of the adults. But the real test of my conversational powers came after I left school. I was timid, and the hardest task that could be assigned me was to receive callers who were strangers to me. My mother's presence tided me over very embarrassing occasions, she invariably drew me into the conversation and by asking leading questions also, which, left me no excuse for monosyllables. But the very best thing that ever happened to me was being obliged to support myself, and thrown among strangers as I was, by that circumstance, I gradually overcame my distressing timidity. Strangely enough it never occurred to me to resort to writing, though others wrote to me so frequently. I cannot recollect an instance in which I ever adopted that method of carrying on a conversation, the obligation to speak had been such a stringent rule at home, I never dreamed of breaking it when away. It is only within the past five years I have taken recourse to writing and then only when travelling, several bitter experiences with lost trains, wrong depots and thick-headed customs officials has taught me to play deaf and dumb, when I can remember. I may add here, that my happy faculty of getting through a journey with speed, ease, and in safety, has converted my husband to my mode of action.

Our assumed characters have often been productive of much mystification and not a little amusement to fellow-travellers and ourselves. Our ability to read the lips has often enabled us to

understand much more than was intended for us and I confess to a wicked delight in occasionally silencing people who presume too far upon our supposed double affliction.

To talk, now, is as natural to me as to breathe, and among congenial spirits and when interested in a topic it is a great pleasure to me. Strangers are no longer a bugaboo to me, so long as they do not know that I am deaf; as soon as they discover it, however, it is sometimes far from pleasant, one does not enjoy being made the centre of attraction and in such a case, I certainly do not. I have received 493 strangers in my schoolroom the past year and spoken to them invariably; of the number I doubt if a third are aware to this day of my deafness, and many of those would not have been, but that they were told of it. It sometimes happened I have not understood remarks addressed to me, and probably in some cases my voice betrayed me. I know very well that it is not like the voices of those who hear.

I have *never* received unkind nor rude treatment from a stranger, though some have made me uncomfortable by pointing me out in public places and discoursing upon the theme of my deafness and literally weeping over me. I regret to say that the rudest indifference and unkind treatment I have ever received has been from the very persons whom one would least expect to behave in such a manner, and they were neither ignorant nor usually considered vulgar boors. When shopping I invariably speak and read the lips, and rarely do I make a mistake, but I am very cautious when pricing goods, as fourteen and forty, etc., look very much alike, and unless I am so unfortunate as to get a clerk who is deaf, I have no trouble. I was once so unfortunate, and the clerk and I parted on very bad terms; subsequent explanation from mutual acquaintances smoothed our ruffled feelings but we were shy of one another ever afterwards.

I used to jump at conclusions like a kitten after a rubber ball, numerous bad breaks and considerable amusement afforded other folks cured me eventually and I go slow now, still I often misunderstand, as for instance, "He will come to see you," was twisted into "He will come to visit you." It often happens my mind is full of a certain thing and I forget that others are not mind readers, for instance, I was busy with a dressmaker and a member of the family coming in asked, "Are you going to row?" I replied, I was, having mistaken row for sew. A short

time later I was much disturbed by a wail from the questioner and "You didn't go to row and Mr. Balis didn't want the boat either, and I think it's real mean." Naturally my mystification was great. The next day I mistook "Mamma's lying down," for "Mamma's gone to town," and did not discover my mistake until I innocently asked if she had gone to another missionary meeting. If it requires great patience to teach a child to speak, what do you think it requires to teach a child to read lips? I'll tell you—it is a sixth sense, commonly called intuition. Or it may be a supernatural power of divination, for lip reading is guess work, a constant study of epigrams and conundrums, a mental and physical strain far greater than you can realize.

Naturally the best and most intelligent deaf persons are the ones you point to with the most pride and of them it is right to expect great things, but believe me, they will never be restored to society say what you will. Few can have been more advantageously placed than I, nor have enjoyed life better, or have been placed in surroundings more conducive to improvement and better prepared to meet men and women on a common footing.

I spent three happy years as teacher of a large number of hearing persons, entered into all the sports and pastimes of my pupils from base-ball to banquets and balls, attended concerts, theatres, lectures, church, participated in exhibitions, acted as bridesmaid to one and went as far as is permitted us with another, on the journey to the land from which none return. Yet when a feeble hand wrote, "Will you come to us in the fall," I left all and returned to what I hope may be my life-work.

In all those three years a sign was never used, a finger never formed a letter of the alphabet. Writing was the last resort always, but very rarely used, to make me understand. In business affairs I never met with any trouble on account of my deafness. In journeys from place to place no difficulty was ever experienced, until recently I never carried either pencil or pad with me, and now I do so only when travelling, though I must confess there have been occasions when it would have been well if I had had such articles within my reach.

My greatest difficulty is with men who sport moustaches. I had the great misfortune once to see one slip bodily from its owner's lips, since that day I cannot prevent myself gazing in awe at a man's moustache and between wondering if it will stick on, and what he is trying to say, I get things badly mixed.

In glancing over this I am struck by the large number of I's in its construction, but having been requested to speak of my own experience there seems no way of avoiding the aggressive letter.

You will probably remark upon the simplicity of the language used here in comparison with what I use when writing. A fear of inability to pronounce aright compels me to use only the simplest language verbally. Naturally it is much easier for me to express myself by writing than orally.

I have on this paper the phonetical pronunciation of words of which I feel doubtful. If you have noticed any mistakes I should be glad to be corrected.

I wish to add here, that the above was written before my recent visit to certain schools in the east. I have visited the model and the ideal schools of the deaf, and would add my testimony to the wonderful success displayed in the systems of both. My views of oral work have been greatly changed within the past month, and I believe I may say with all sincerity my heart and sympathies are with you all who have been laboring so long against such odds, still I *do not* believe *all* children born deaf can be taught by speech or to speak successfully, however, I am convinced the percentage is larger than I once believed.

MY EXPERIENCE IN PUBLIC SCHOOLS

BY

MRS. L. M. SANDERS

OF

ROCHESTER, N. Y.

MY EXPERIENCE IN PUBLIC SCHOOLS.

It has been for many years, and particularly since Dr. Bell founded a new association with a long name, my earnest desire to make public my history as a school-girl, my object being to encourage other deaf children to go and do likewise. I refer to those deaf children who retain their power of speech. Parents and friends of such, knowing of my success, might be encouraged to send them to the public schools instead of making deaf-mutes of them by placing them in institutions for the deaf. I have also wished to do something to show my sympathy for the cause in which all who are present here are so greatly interested and if this little history of mine has any good influence I shall be satisfied.

Now credit to whom credit is due. It is owing to the ambition of my deaf-mute mother, Mrs. Swett, and the unceasing interest and encouragement of my hearing sister Miss Swett, who has charge of the deaf-mute school at Beverly, Massachusetts, that I am to-day a graduate of the public schools. They tell me that there were many to urge them to send me to Northampton, but both refused to listen to the mistaken advisers; both encouraged me to mingle with the hearing; both discouraged any desire I manifested for the society of the deaf or for knowledge of the affairs of the deaf, succeeding so well in this last that not till I was nearly seventeen years old did I know that the number of deaf-mutes in the United States was so large, or that there were other schools for the deaf besides the ones at Hartford and New York. I think this is remarkable because my parents were deaf-mutes with a large circle of friends similarly afflicted and were subscribers to the periodicals published for that class. When I was about seventeen, I met some of the brightest graduates of Miss Yale's admirable school; their ability to speak and to read lips was a revelation to me; then began my interest in the speaking deaf, which interest deepens as I grow older and realize the far-reaching benefits of the oral system.

My memory of my own ability to read speech extends back to my first day at school when I *saw* my teacher ask my name, residence and age. All was smooth sailing until my entrance to the High School of Beverly when my power of reading lips was put to the test; it was hard work and I nearly fainted by the way, but, as I had unconsciously adopted the motto "Never give up," success rewarded me. Although my hearing never entirely left me, I depended wholly upon speech-reading during my fifteen years of school life. The best teacher in the world was mine—Madame Experience.

There is little to say in regard to the social side of my life during childhood. With the hearing I made mud pies, signed temperance pledges by the score and sang "The Consecrated *Cross-eyed* Bear."

My playmates, my friends, my teachers always treated me as if I were a hearing girl; the last always expecting me, as a matter of course, to speak pieces when small, when older, to declaim and to read my essays, all of which tended to make my pronunciation more correct, my enunciation more clear, and my voice stronger and more flexible.

I notice that people sometimes fail to understand me when I use a word containing "ee." It is usually the grocer who fails to understand when I call for cheese. Either he is very stupid or I do not pronounce the word correctly, I do not know which.

Now comes, what is to me, the most interesting point of my school history. It was 1881 when I graduated from the grammar school. Because some of the questions asked were those which had been studied when I was absent owing to illness, I failed to pass the examination for admission to the High School of Beverly and returned to the grammar school; later, probably influenced by the Northampton graduates aforesaid, I applied for admission to the school at Northampton, was admitted, and my three months' stay there had one good result. I was taught the importance of the proper control of the voice.

In some way the principal of the high school, Mr. Enoch C. Adams, now of Newburyport, Massachusetts, learned that diffidence prevented me from braving a second examination. He called a meeting of the school committee to discuss the matter. Some feared that I would hinder the progress of the class, but all agreed to subject me to a private examination and to admit me on trial for three months. I determined to remain through the

course of three years and remain I did, graduating with a class of twenty-eight. I wish I could say that my rank was first, but I cannot; but while it was not first, neither was it the last. One incident I enjoy relating. One day, Mr. Adams requested those who wished to take up the study of French to rise; as I arose, the three teachers on the platform looked surprised and put their heads together. I made up my mind to disappoint them, and I did.

One other good teacher I had — books. My people encouraged reading, my love for it became omnivorous and I became an inveterate borrower of books. When quite small — eleven years old I think, attracted by the title, I borrowed "The Diet of Worms."

Now as to questions of social life: my own observation has shown me that the coldness and neglect by the hearing people of which the deaf complain so much, and which is partly the cause of clannishness on their part, is clearly attributable to the failure to understand each other; that this misunderstanding must be and can be dispelled by the deaf themselves who should take the initiative step. My experience has taught me that Mahomet must go to the mountain: in other words, the deaf should not, when attending any gathering of the hearing, remain glued to one spot waiting to be spoken to by people who are afraid to do it, but should go to them and make them see that there are other subjects to talk about than the weather, and the health of their sisters and their cousins and their aunts.

One thing I must not fail to mention because of the help it was to me—nearly all my schoolmates could use the manual alphabet which took the place of whispering and which had the greater advantage in that it could be used anywhere, at any time, and at almost any distance. In that way I kept abreast of the times. My mates were all kind and interested. A look of inquiry was *never* unheeded. You see, the Fates conspired to be kind, so that I learned to think of my infirmity as a slight inconvenience *sometimes*; *never* as a calamity.

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AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

"FURTHER CONTRIBUTION TO THE STUDY OF THAT SUBTILE ART WHICH MAY INABLE ONE WITH AN OBSERVANT EIE TO HEARE WHAT ANY MAN SPEAKS BY THE MOVING OF THE LIPS."

[Bulwer 1648.]

BY

MRS. ALEXANDER GRAHAM BELL,

THE TEACHING OF SPEECH-READING TO ADULTS

BY

MISS SARAH ALLEN JORDAN,

SPEECH-READING

BY

MISS SUSAN E. BLISS,

AND

SPEECH-READING

BY

MISS MABEL ELLERY ADAMS.

ROCHESTER:

WESTERN EW YORK INSTITUTION FOR DEAF-MUTES.

1894.

HARVARD COLLEGE
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"FURTHER CONTRIBUTIONS TO THE STUDY OF THAT SUBTILE ART WHICH MAY INABLE ONE WITH AN OBSERVANT EIE TO HEARE WHAT ANY MAN SPEAKS BY THE MOVING OF THE LIPS"

[Bulwer 1648.]

BY

MRS. ALEXANDER GRAHAM BELL

BEINN BHREAGH, NOVA SCOTIA, CANADA.

"FURTHER CONTRIBUTIONS TO THE STUDY OF THAT SUBTILE ART WHICH MAY INABLE ONE WITH AN OBSERVANT EIE TO HEARE WHAT ANY MAN SPEAKS BY THE MOVING OF THE LIPS." [Bulwer, 1648.]

When President Gillett asked me to write a paper on speech-reading for the American Association I said I did not see what I could say about it. Carrying on conversation by word of mouth is as natural and easy to me as to any hearing person. Of course I speak, and of course, being deaf and therefore unable to read speech by ear, I read it by eye, and there is nothing more to be said. As to the how—does any one take thought how they see, and hear, and move? Why then should I examine any more closely the mechanism by which I see lips move and translate the movements into speech —than the mechanism by which I see trees move, and become conscious that the wind is blowing from the east to the west? Both are processes of deduction from past experience and knowledge. So also it is by deduction from past experience and knowledge that the hearing person comprehends a certain variety of sound as speech. But the process by which he accomplishes this is a very great mystery to me. I wish President Gillett would explain to me how he understands speech. How much of the process is mental, and how much mechanical? How many years did it take him to learn to comprehend speech by ear, and was it difficult at first? How does he know that one sound that can be represented by a sharper pointed zig-zag line than another is one word, instead of the other? I am afraid President Gillett might find some difficulty in making this clear to me, and I know I find great difficulty in trying to explain how I hear by eye. So much so, indeed, that I have been on the point several times of

giving up the attempt in despair. The more smoothly a piece of machinery runs the less the operator thinks or knows about it. It is only when it gets rusty and refuses to work that the operator has to study its mechanism in order to remedy the defect, and thus becomes acquainted with its method of working. Thus it has been with my speech-reading machinery. Generally it works so easily I do not pay any attention to it at all. It is only since President Gillett did me the honor to ask me for my ideas on the subject, that I have been trying to take this machinery of mine apart and study its mechanism. I submit now the results and also, though with diffidence, a few thoughts generally upon what the quaint old 17th century philosopher, John Bulwer, so aptly describes as "that Subtile Art which may inable one with an observant Eie to Heare what any man speaks by the moving of his lips."

I think, perhaps, if I could remember both having once heard, and then losing my hearing, and the processes by which I learned a new way of communicating with my friends, I might have less difficulty in explaining both how I did it, and the nature of the difficulties I, and all the other students of the "Subtile Art" have to overcome. As it happened, however, I was so young when the illness which deprived me of my hearing occurred—it was so severe—my convalescence was so slow, and the consequent mental weakness so great, that I not only cannot remember ever having heard, but cannot even recollect having been in a materially different position as regards articulation and speech-reading from the one I have occupied for so many years. Of course, I could not have spoken and read speech as well as a child as I did later, but I cannot recollect being conscious of any difficulty in communicating with my friends. More, I do not remember that the fact of my deafness was ever borne in upon me then. Of course, I knew it, as one knows the sun is shining, or that it is cloudy, without its making any impression upon the mind. My strongest feeling, as regards myself and my sisters, was that I was eighteen months older than the eldest, and, therefore, very much wiser and more experienced.

I presume the reason why I remember nothing of my first steps in speech-reading and articulation is due to the long period of mental and physical feebleness which followed my illness.

My mother says that for many months I took no interest in anything and seemed to have no wants to express, and the baby speech I had previously possessed seemed entirely gone. During all that time my mother was working, planning and striving, by every means in her power to give me back the speech I had lost, and to make me read her lips. She talked to me long before I cared to talk back, and gradually, I suppose, both language and the ability to read speech came together with increasing mental and physical health. The process must have been gradual, and I must have learned to speak and read the lips together, for I remember nothing of all this, and it seems to me obvious that if I could speak much more, and sooner than I could understand others, or *vice versa*, there must have been a disproportion between the two powers which would have left an impression on my mind. However this may be, it remains true that my earliest recollections are of being able to talk, and of understanding what was said to me, at least sufficiently well to satisfy all my requirements.

I remember no stormy outbursts of passion, such as I believe are too often consequent on the inability of a deaf child to make his wants known. Looking back now, it seems to me that whatever method my mother, and the young, inexperienced girl of twenty who assisted her, pursued in my instruction, must have been the true and natural one, simply because it has left no trace on my memory. All natural processes of growth are gradual and imperceptible, there are no violent shocks and sudden changes such as leave a mark on the memory. It is the unnatural methods of instruction, that by demanding unnatural, and therefore painful efforts from the child, leave marks of the work on his mind. You may think that I am theorizing upon a subject about which I, not being a teacher can know nothing, but I have in mind the one item in the plan of my instruction which I do remember, and which I believe impressed itself on my memory just because it was unnatural. This was a daily drill in writing from dictation sentences which our teacher read from a book. My sisters, with whom I was educated, shared in this drill, and I do not remember objecting very strongly to it, but it was most slow and irksome work, and I always remembered it was the one lesson I did not like. Well, to-day it is no uncommon

occurrence for my husband to talk to me perhaps half an hour at a time of something in which he is interested. It may be on the latest geographical discoveries; Sir Robert Ball's "Story of the Sun"; the latest phase of the Hawaiian trouble,—some abstruse scientific problem in gravitation,—anything and everything. Very rarely do I have to ask him to repeat, and at the end I would be ready to back myself to give the substance of what he had said, almost word for word, as well as any hearing person. But it is absolutely and utterly impossible for Mr. Bell to sit down and read me the shortest paragraph from the simplest book, and have me understand him without the greatest difficulty and strain.

I have often wondered why this should be so, and tried to detect where the difference came in, but without success, it is so slight and imperceptible. Mr. Bell is a good and expressive reader; yet there is a change in his manner of reading or of "holding forth," as the expressive slang phrase has it, which makes all the difference between ease and difficulty of comprehension. And what is true of Mr. Bell, is true of every one with whom I have held communication. I have therefore learned to read the lips, not because of the drill in dictation, but in spite of it. I am convinced, therefore, that the drill was a mistake, unnecessary, a waste of time, and that it is not to be recommended as a means to the acquisition of the "Subtile Art."

With this exception, I cannot remember that any special exercises were set to teach me speech-reading. I just grew into it naturally—just as a hearing child grows into the knowledge of hearing speech—by perpetual practice. Every one spoke to me—no one made any signs and I cannot remember making any, or wanting to make any. I observed that whenever my mother's visitors came to call they talked to one another so fast that I could not understand them, and that I couldn't talk as fast myself—but I was quite satisfied that the ability to do both would come by and by with long dresses—and, meanwhile, I and my sisters played "visitors" and talked gibberish as fast as we could, and were satisfied.

But while emphasizing the fact that my acquisition of speech-reading was a process of growth, to me perfectly natural, I would not be understood as claiming that no special

effort was made to teach me. On the contrary, few children have had more care and anxious thought bestowed on the best means of instructing them—but I do claim that my mother and teacher—whether by accident or great wisdom and good judgment, happened to hit upon what was for me the best possible method of instruction—and the proof of this lies in the fact that I, the child, was conscious of nothing forced or painful in my growth into understanding. I am not the best possible speech-reader, but this does not militate against the merit of the method employed for reasons that I will explain later, when I come to describe the qualifications for speech-reading.

The method of instruction pursued by my mother and teacher—pioneers in a new world of effort, as truly as Columbus himself—was essentially the same as that pursued with my two younger hearing sisters. In fact, we were taught together and I remember no difference being made between us. Very early books were placed in my hands and I became passionately fond of reading. I did not care to romp and play out of doors, all I wanted was to curl up in some quiet corner and read—all day long if allowed. My father's library was well stocked and I had almost free range. When eleven years old I delighted in reading such books as Jane Porter's "Scottish Chiefs," and before I was thirteen I had read through, with intense interest, Motley's "Rise of the Dutch Republic," most of Prescott's histories, several large volumes of the civil war—books of travel—as well as all the stories and novels I could get hold of. We went abroad for three years, when I was twelve, and my mother made a point of giving me all the histories and historical novels she could find of the places we visited. I went through a good many books in this way. Carlyle's "French Revolution" was the only book at which I rebelled, and when I made a list of the words I could not understand my mother did not insist, as they were pretty well beyond her own comprehension.

I have dwelt thus at length upon this reading of mine because upon it rests all my success in speech-reading.

From the day my mother knew that I would lose my hearing, to that on which she gave me into my husband's care, she was working and planning for her child—eagerly seizing every opportunity that promised advantage. Of all the good she

did for me the greatest was when she taught me this love o reading and gave me the means to gratify it.

I have looked back over my life—I have taken apart my speech-reading apparatus—I have thought carefully over all my experiences—and the result at which I have arrived is that not only is success in speech-reading dependent upon reading—or, rather, on the extensive and intimate knowledge of language imparted by reading—but that speech-reading is impossible to any useful extent without it.

The "observant Eie can Heare" part, but this, which our 17th century guide and philosopher thought essential to the knowledge of the "Subtile Art," Helen Keller, and others like her, have proved is not absolutely necessary. By carefully studying my daily practice in speech-reading, I see evidence throughout that it is essentially and primarily a mental art, the mechanical act of reading or feeling the movements of the speaker's lips forming,—although a necessary,—yet but a small part of the whole.

Speech-reading is the systematized result of practice:—

I. In selecting the right word from a large assortment of possible words presented to the eye or hand:—

II. In the power of grasping the meaning of what is said as a whole, from possibly a few words, or even on parts of those words recognized here and there.

Ist. There is a very large number of words which are alike to the eye. In fact, it is possible to see resemblances between almost every word and a dozen others. Consequently, the eye, or finger, alone cannot determine which of a dozen possible words is the one used by the speaker. It is therefore necessary first, that there should be an intimate knowledge of a large number of words, from which to select the probable word, and second, that the habit of making the selection should be so well established that it could be done instantaneously and automatically. In perfect speech-reading there is no more conscious effort in this selection than in the act of winking.

2nd. In consequence of the large number of words that are alike to the eye, the art of speech-reading consists in seeking to grasp the meaning of what is said, as a whole, rather than in wasting time trying to decipher the words one by one. By making sure of a word, here and there, by the method shown

above, the trained mind is able to fill the blanks between, and to spring instantaneously to a clear realization of what is being said. This, too, in perfect speech-reading is automatic and unconscious and the mind of the speech-reader keeps pace with the speaker, so that it might appear as if the speech-reader really read the words mechanically—one by one—from the lips. I might often be led into this belief myself — I can generally follow my intimate friends so easily and rapidly, — but I am undeceived by finding that occasionally my friend has finished speaking without my having understood a word. Then before the word "What?" is fairly out of my mouth, the whole sentence will flash into my mind complete, word for word, like a flash of light projected into darkness, and is as apparently without volition on my part as the distant flash from the lighthouse.

Do I make it clear? I don't assert that it is impossible to read word by word, — mechanically, from the speaker's lips. That is quite possible, but it is the slowest, most uninteresting and the most difficult method of speech-reading and is only possible when the speaker articulates with unnatural slowness and deliberation, and is no more accurate than the other. For, adding together the power of grasping meanings as wholes, and the habit of selecting the correct words from the knowledge of resemblances, the result in perfect speech-reading is the understanding of every word spoken, as surely and a thousand times more rapidly than by the mechanical word by word deciphering.

It has the further advantage of allowing the speaker to speak almost as rapidly and indistinctly as usual. For, as every one knows, few, even of the most precise speakers, give to each word its full value. Words are more or less slurred over and run together, so that really there are few properly pronounced words for the speech-reader to see. Consequently, if one is to go out into the world and read the ordinary careless half-uttered speech of the generality of mankind it is necessary to cultivate the habit of going as straightly as possible to the point, and bothering as little as may be about the exact words used. Ninety-nine times out of a hundred this is all that is required, or, I venture to say, is remembered the next moment by a hearing person. My practice is to allow a talker to go on with what he is saying, even if not one word is understood, in the hope that before the end a word or two may be recognized which will, as it were, throw

a flood of light upon the whole speech, rendering past words intelligible. In this way, it is often possible for me to understand the long story or speech, of a person whose short remarks are hard to follow.

Strangers in general and people unaccustomed to conversation with speech-readers, sometimes seem to think that the converse of this is true; that they must talk in short, jerky sentences, using as few words as possible. Of course, this, by reducing to a minimum the number of words out of which the speech-reader may hope to cull one or two with which to decipher the meaning, only increases the difficulty of comprehension.

Words of many syllables are more readily understood than short ones, for the same reason that sentences, as wholes, are more comprehensible than single words, there is more to take hold of.

Ordinary questions and conversational remarks, being not only short, composed of few words,—but these few words of the shortest, fewest syllables, might be almost incomprehensible but for the natural expressions of the face which generally accompany them.

Hearing people depend on these facial expressions to an extent that is, perhaps, not realized until some humorous fellow delivers himself of a joke with a perfectly serious face and in a flat voice. The very essence of the fun to him is to observe the bewilderment depicted on the faces of his hearers, the voluntary pause, hesitation, longer with some, shorter with others, before his meaning breaks upon them, and the laugh goes round. It is impossible to open a novel, a biography, or hardly a daily newspaper without coming across commendatory references to a speaker's expressive face, the suggestive modulations of his voice, or, complaints of the difficulty of following the ideas of a monotonous speaker. What does all this mean if not that hearing people, possessors of a language made by themselves, and by them adapted as perfectly as may be to their own convenience, yet find it necessary to invent some other method of making a speaker's ideas clear.

They have invented the rising inflection of the voice for questions; falling ones for answers or assertions till the fortunate beings can almost grasp the speaker's remarks without the

trouble of listening to his words. Every hearing person makes liberal use of smiles and frowns, the stern, or the gentle mien to enforce his meaning. So important is the proper use of these aids to comprehension considered, that schools of oratory have been established for their study, in which inflection of the voice, turn of the head or the hand, the lifting of an eyebrow receives due and careful consideration.

And all this for the benefit of hearing people with a language of their own making ! !

The speech-reader is, therefore, but following the usage of his hearing fellow in availing himself of the only one of these adventitious aids to comprehension open to him; namely, study of the expressions of the face. This study becomes quite as instinctive and unconscious with him as with hearing persons, and by its aid many obscure questions or short remarks are elucidated.

I know at once by the speaker's natural involuntary glance whether a question is being asked, or a casual, unimportant remark being uttered. I bend at once my energies to mastering the question, and if I cannot understand it in one form, I beg that it be repeated in another; the remark, if I fear a tussle to understand, I let slide.

Fancy the feelings of a shy, innocent stranger at seeing a speech-reader struggle laboriously to comprehend some careless remark about the weather ! How she wishes she hadn't said anything; how quickly she edges off from the embarrassing person, and how carefully she avoids further conversation with her. How much better for the speech-reader to encourage her to talk on and on, until, at last, words are recognized to which the speech-reader can reply, and conversation become established.

The habit of thus seizing the resemblances of words and springing to the realization of what is said as a whole, is, of course the result of long training and practice. With me, this training began from the very beginning, and the habit was formed unconsciously, and I am only made aware of its existence when struggling with the difficulty of understanding a stranger. I have no doubt, however, that this habit could be systematically cultivated. It should not take long for one possessing a good knowledge of language and a quick, bright mind to develop into a fair speech-reader. I noticed at the last two meetings of the American

Association that several of our brightest teachers were speech-readers; some hearing members of my family have learned to read speech pretty well without much effort, and I recommend its study strongly to hearing people. I believe there is a great future before it when its adaptability to various purposes becomes better understood. For instance, it is a great convenience in a noisy place, where it is "almost impossible to hear one's self speak."

If I needed proof that speech-reading is essentially an intellectual exercise demanding good vernacular knowledge of language I should find it in my experience with German.

For six months, at one time, I lived in a German boarding school with only one friend with whom to talk English. Before the end of that time, I could read the German speech by eye nearly as readily as the English, and it was but rarely that anyone had to write off a German sentence for me. This was many years ago, and since then my opportunities for talking and listening to Germans have been few. I find now that when I meet a German friend and try to carry on a conversation in German, I cannot do it at first. I can put together a few German phrases to express my own ideas, but I cannot decipher the movements of the speaker's lips. Why? I find it is because the German vocabulary at my command is too small to allow me to select from it some words that may be the words my friend is using. I find myself consciously and painfully running over my small stock of possible words, much as a miser over his store of coin, and the chances are infinitely against my having the right word. This would be disheartening but that I have found by experience that by reading German books for a while, steeping my brains in German, as it were, so that I think in German, and see in German, it becomes comparatively easy to catch the German words on my friends lips.

Many people have the idea that in order to be understood by a speech-reader they must speak more slowly, and open their mouths wider. Up to a certain point, and with some people,—not all,—I find it true that slower and more distinct articulation is an advantage, but beyond that point slowness of utterance is a distinct hinderance to comprehension, while the unnatural opening of the mouth is almost prohibitive of conversation. In the

first case, the speech-reader's mind, accustomed to run rapidly, is apt to assume, either that there must be more words in each slow movement of the mouth than appears, and be thrown off the track, or forced to linger over and study each word forgets the previous ones, and confused by a mass of details, fails to grasp the full meaning.

In the second case, the widely opened mouth, showing parts of words not usually perceived, so changes their accustomed appearance as to render them unintelligible.

There are no two faces in the world exactly alike, and every person has his own peculiar way of speaking. In some the peculiarity is greater than in others, and the difficulty of comprehension is increased, so much so, that at first it may seem utterly impossible to make head or tail of what is seen. I am, however, inclined to believe that there is no speech so indistinct which a first-class speech-reader can not master after a while.

It would be hard to say what makes intelligibility to a speech-reader. A great deal of lip action may be difficult to understand, yet too little is equally detrimental. Again, the lip action may be good and yet some peculiarity of the tongue or teeth or of pronunciation render the speech difficult to read. Moustaches, if not too heavy, make little difference one way or another, except at night under a hanging light, when of course, they shadow the mouth. I think, take it all in all, that if there are no abnormal peculiarities of the organs of articulation, or of pronunciation, it depends principally on the speech-reader whether the speech is intelligible or not. Practice makes perfect, and although I have met many people whom I could not understand, I am not convinced that I could not have understood most of them in time,—given the opportunity and the desire to become accustomed to their peculiarity of speaking.

Besides, I do not account myself in any way, a first-class speech-reader, and people whom I find difficult to understand, others might find easy.

Bulwer's "Art" is as truly an art as any other. There are grades in it, as in others, and special talents are required to attain great proficiency in it. An active, alert mind constantly on the *qui vive* to receive impressions; keen as a razor in reaching the salient point of things; bright sharp eyes that see everything and let nothing escape, are qualifications for attaining a high degree

of proficiency in the art, and these, however many other nice things I may have, are not mine. The best system of education without special talent will not create a Michael Angelo, but it may make a very good, practical artist, who can do sufficiently good work to support himself and his family in comfort. So, without any special inherent fitness for speech-reading, I have attained sufficient skill to serve all practical purposes. My father and mother, my husband and children, my relatives and friends, and my servants, all talk to me, and I at least have never felt that there was any bar to the fullest and freest communication between the immediate members of my family and myself. The occasions when one of them has to use paper and pencil are of the rarest, perhaps once a month, to spell some unfamiliar word or name. With less intimate friends and business people, communication, of course, is much more restricted, and often I get one of my daughters to act as interpreter. I might, of course, use pen and paper, but the strange part of my experience is that no one will take the trouble to write to me if it can possibly be avoided. If an interpreter is not at hand, the speaker will prefer to repeat again and again, until my patience is exhausted, and I will insist on the pencil and paper, which reluctantly used, will be dropped the instant I show signs of understanding without them. This experience is universal. Ladies and gentlemen, trades people and servants—all regard writing as a nuisance, to be avoided as much as possible.

In conclusion, I would offer, as the contribution of a disciple of John Bulwer, the following propositions:—

1. That speech-reading is essentially an intellectual exercise; the mechanical part performed by the eye or finger in tracing the movements of the mouth, although necessary, is entirely subsidiary.

2. That speech-reading is practically impossible without a good and readily available colloquial knowledge of vernacular language.

3. That while speech-reading is practically impossible without a vernacular knowledge of language, that alone is not sufficient. The mind has to be trained to use this knowledge instantly and automatically, and this training is only possible through constant and persistent practice.

4. That the aim of the speech-reader should be to grasp a speaker's meaning as a complete whole, and not attempt to decipher it word by word or even sentence by sentence.

5. That speech-readers should be encouraged to take advantage of every possible aid to reach the speaker's meaning, such as any hearing person would employ in conversation with another; viz,—expressions of emotion, etc., and, finally:—

6. That to those to whom the doors of sound are closed the acquisition of the "Subtile Art which may inable one with an observant Eie to Heare what any man speaks by the moving of his lips" is worth, and well repays, every possible effort to attain.

THE TEACHING OF SPEECH-READING TO ADULTS

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THE TEACHING OF SPEECH-READING TO ADULTS.

Few persons realize what speech is. They talk almost constantly without thinking of the many and varied positions which their lips and tongues are taking to produce the articulate sounds which we call speech and which is the means of communicating our thoughts in the daily intercourse with our fellow-beings.

It is not necessary that we should notice this action of the vocal organs, so long as the voice can be heard, but if, for any reason, the sound does not reach the ear, we involuntarily direct our attention to the lips of the speaker and try to gain from their movements the thoughts which he wishes to give us. One may thus substitute the eye for the ear and learn to understand the, at first, senseless action, and to see whole thoughts clearly written upon the tongue and lips. Persons may learn to understand from the lips of others without making a study of the positions of the elements, but it is then often guess-work and the task a much longer, more difficult, and a much less satisfactory one, than if a good foundation is laid by carefully studying the exact position for each element of speech and thus gaining a thorough acquaintance with the movements of the vocal organs. In either case, practice is necessary for proficiency in speech-reading, but those who acquire a thorough knowledge of the principles have a better foundation upon which to base this practice than those who have from the beginning, tried to read nothing but clauses, or whole sentences.

Most, perhaps all persons who become deaf in adult life, watch the lips of those speaking to them and often, without realizing it gain a great deal of help from them. Once the remark was made to a pupil that speech-reading is an art, if it may be so called, in the acquisition of which one has almost hourly help. She replied that she had never had any conscious practice.

Most of the elements, from the very nature of their formation, arrange themselves into groups of two or three, p, b, m forming the first group; t, d, n, the second group; k, g, ng, the third, and so on. The formation of each of the elements of the groups should be explained and the similarities and differences pointed out. To the eye of the student the differences between the positions for the elements which make up each of these groups are very slight, even when spoken slowly, and in rapid speech there is perhaps no difference at all. However, it seems best to study even the minutest distinctions for the purpose of giving to the eye the careful training which it needs.

After a few of the consonant positions have been fixed, it is well to present them as initial and as final elements with a certain vowel. The vowel ä, as it is the most open, and from its formation allows the action of the tongue to be readily seen, is one of the best with which to work at first.

Most of the vowels, from their formation, arrange themselves in pairs, the difference in the width of the aperture of the mouth being the distinguishing characteristic of the front vowels and a corresponding difference existing in the back vowels.

After simple combinations have been mastered, the pupil may study those which are more difficult, and which he will meet in a great many words; such double consonant combinations as st, str, sp, sm, sn, pr, br, tr, pl, kl, and many others. From this, the work goes on to the understanding of clauses and finally to that of sentences as a whole. If, in this work, a word is lost the pupil can at once study it out in an intelligent way, from his knowledge of the elements.

It will be found that the plan of directing the student to form lists of words having a similar appearance on the lips, is a great help to him.

Although experience has shown excellent results from this systematic study of, first, the elements; second, the simple combinations; third, more difficult combinations; fourth, phrases, and fifth, sentences as a whole, yet the teacher should not hesitate, even in the beginning, to repeat, occasionally, full sentences, and she may feel quite sure that something is gained from them.

All this may seem a long, tedious piece of work, but experience has proved that time is saved and the lessons can be made very interesting.

Great difficulty is found in making students of speech-reading appreciate that in speaking we do not give the names of the letters in the words, but the sounds of them. They seem not to have the slightest idea that we do not pronounce the names of the letters and every letter in every word. It is a surprise to many of them that in a word of perhaps half a dozen letters the tongue actually takes but four positions, or that words are not pronounced exactly as they are spelled. This is a great hindrance to the progress of the learner of speech-reading, however intelligent he may be in other matters.

This difficulty has, however, been overcome by the plan o directing the thoughts to the positions alone. The results have been so satisfactory as to make it felt that an adult speech-reader should never be allowed to associate the *positions* of the vocal organs with the letters. It is with positions that he has to do, then give to him the Visible Speech Symbols which are pictorial of the vocal organs. With a little explanation their character will be seen and the reason for the grouping of the elements will be more apparent than before.

Instruct the pupil to take the positions assumed by the lips and tongue of the teacher and in this way reproduce the sound. Also let him write in symbols the positions taken by his own as well as by the teacher's vocal organs, when pronouncing single elements, syllables, or words. The phonetic analysis which comes from this exercise is of very great value, and all this conscious, careful study of his own mouth makes the speech-reader better prepared for an intelligent interpretation of the movements of other mouths. Many persons whose hearing has become impaired by illness are, from that cause, in a weak, nervous state, and are deterred from studying speech-reading by the fatigue which they think will come from the lessons and which certainly will if the subject is not treated judiciously. Two ladies, who by reason of the enthusiasm of the one, and the patient desire of the other, to learn to read speech, met day after day and went over the ɒʃ, ɐʃ, ɜʃ and the ʊɾ, ɷɾ, ɯɾ exercises until, tired out, they looked upon speech-reading as a mountain too high to climb and the journey too wearisome to attempt. Such too has been the experience of some pupils when studying with a teacher.

The wisdom of the instructor should decide the course to be pursued and more than all the lessons must be made interesting. Do not allow a student to think of the task as too difficult, or one which requires a long course of lessons, for the foundation can be laid in a short time and upon him falls the rest, practice, practice, practice in deciphering the movements of the lips. After the pupil has learned to understand the teacher well, it is helpful to call in one's friends, first one, then another, to talk with him so that he may have quiet practice, under the teacher's supervision, in reading the lips of different persons, before he is thrown upon the world, where the excitement of meeting people renders it more difficult to concentrate one's thoughts.

Although the student of speech-reading has to do directly with the visible vocal organs, yet he can get very great help from watching the face of the speaker ; by noticing the expression about the mouth, in and about the eyes, and also that of the face as a whole. Sometimes an entire story is written there and can be interpreted, though not a word is uttered.

A grave mistake which some deaf, as well as hearing persons make, is that of being listless, inattentive, drawing themselves too much within themselves, dreaming as it were. This is something which no one should allow himself to do while with others, for we do not know at what moment we may be addressed by those about us, and we must be watchful. How many times have we heard dreamy people say, when spoken to for the second or third time, "O, yes, I heard your voice but my mind was wandering." It may be interesting to hear the experiences of a young man who has become so proficient as a reader of speech that it is difficult to convince a stranger that he does not hear a word of the conversation in which he engages with several persons. The secret of his success is his alertness. He does not make a remark or answer a question and then drop his eyes as if all conversation were at an end for he knows that most naturally another remark will follow from some one and he must be ready to see it. Then, too, he glances from one to another in a most natural way and one would not suspect that he is lying in wait for remarks. He is now in business in New York, and is one of the leaders in a large social circle. His deafness is evidently not a hindrance to

him. A portion of one of his letters shows that he is not debarred from the enjoyment of society. He says, in a note written last January: "My time this winter has been very much engaged. I have been going to balls, parties, receptions, etc., about all the time, in fact, I am a regular society man. I belong to a whist club and we have regular fortnightly meetings and have fine times. New Year's Day was celebrated here with great style. I had a jolly time calling upon my friends, of whom I now have a good many. On January 5th, our whist club gave an informal reception which was a great success. As you may imagine I am very happy here."

Another mistake which deaf people make is in not keeping up their part of the conversation. Conversation is an exchange of thought, the turning over the thoughts in one's mind with another person and by the very nature of it cannot be carried on by one alone. Several years ago a young lady who had difficulty in hearing, went to one of the leading aurists of New York. He saw that she was a quiet, diffident girl and that she shrank from entering into conversation for fear of not being able to understand what was said. He advised her to follow the example of a lady who said that when she was with other persons she "always talked just as fast as she could and then people seldom had a chance to find out whether she could understand or not."

She had not, I think, studied speech-reading, else she need not have taken such violent measures. A short time ago, I met the quiet young lady looking very happy. She said that at the afternoon whist-party from which she was just returning she had taken the advise of the New York aurist, had entered freely into conversation and, as a consequence, had had a delightful time. Another deaf lady has said that she always tries to introduce the topic of conversation, for it is less difficult to understand what is said, if one knows the subject.

Every opportunity should be taken to read the lips of people, in the church, in the streets, in the cars, and in the stores, but some to whom this advice has been given, say that they do not like to stare at people. Certainly not, but glance about now and then and you will doubtless catch several words. If it is but one word, it is worth something. One word caught from the lips of each of a half a dozen persons in a short car ride down town has added six words to your store, new ones

perhaps, or if not, the experience has strenghtened those already somewhat familiar.

No two persons use their lips in exactly the same way and consequently it is of great importance that one should become acquainted with the workings of many mouths, in order to prepare himself for individual peculiarities. More than one person receiving instruction in speech-reading has remarked to his teacher, "If every one would speak as distinctly as you do, I should have no difficulty in understanding, but they don't." This brings us to the consideration of an important point—the duty of hearing persons, not only to the deaf, but to one another. This duty is to speak distinctly, to form the elements carefully, not necessarily slowly, for slow speech is by no means the least difficult to understand.

How far can the hearing, much less the deaf, be expected to comprehend what is being said by a person whose lips are as immovable as if made of clay; are never opened widely enough to allow the play of the tongue to be seen; from whose mouth escapes only a muffled sound, whose eyes lack expression and whose face is a blank! Yet there are such persons all about us. Hearing people sadly need instruction in articulation and correct habits of speech. Few, however, seem to realize the deficiency, or if they do recognize it, are unwilling to take the pains to improve their speech.

I am glad to see that our schools of oratory are training men and women to habits of distinct, careful utterance and are sending them out, far and wide over the land, to be a blessing to all, especially to the readers of speech.

SPEECH-READING

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SPEECH-READING.

The tongue has been called the glory of man, and articulate speech is surely the finishing stroke in the likeness of man to his maker. Endowed with a divinely implanted need for intellectual intercourse and exchange of idea, every normal human being finds in his capacity for speech a divinely given means for its fulfillment. All mentally perfect human beings enter the world with the germs of speech within them, which fail to develop and blossom into spoken language only when the instruments adapted to their cultivation are wanting, or remain unemployed.

The instrument most perfectly adapted to this purpose is, beyond doubt, the sense of hearing, but when this is lost or seriously impaired, we find in sight the best known substitute.

Speech is not natural to man, as eating and sleeping are, for in known instances where individuals have been removed from all society of their kind in early infancy and have remained isolated for years, upon re-introduction to human society, they have learned to speak and to understand speech, only as a child does,—by imitating the sounds familiarized to the ear by constant repetition, and by slowly learning to associate those sounds with ideas previously formed in its mind. We are not born with a ready-made vocabulary of our native tongue conveniently stored away in our brain; our native language, our mother tongue, is more or less consciously acquired.

Whether man at his creation was endowed with a language of words ready for utterance, or whether that language was the slow outgrowth of his needs and desires, does not concern us here. The significant fact to us is that for century upon century, through all the ages of man's existence, nothing better than spoken language has been discovered or devised as a means of sure, ready and convenient exchange of idea among the masses of mankind, civilized or uncivilized, enlightened or unenlightened. To-day, as thousands of years ago, it is an all-embracing, all-uniting bond between races and peoples as between

individuals. Ways to record speech and ways to transmit it *have* been devised, and stand forth as magnificent monuments to human ingenuity. The relative importance of spoken and written language to the progress of man has given rise to infinity of discussion; but speech itself is the one universal medium of thought exchange. Discussion as to the desirability of other media of exchange for the deaf may be interesting and profitable, but does not lie within our province now, while on every side are evidences of the dominant truth that until custom shall affix its stamp to give it efficiency, no other medium will be accepted by the world at large.

Speech being a well authorized and the most generally accepted currency in the realm of intellect, ability to understand it is surely desirable for every man, deaf or hearing, and is indeed imperatively necessary would he have real community with his fellows. And oralists admit not only the desirability but the practicability also of giving an understanding of spoken words,—the universally used symbols for ideas,—to the deaf. The end towards which we are striving is that the deaf may think in and readily use the language used by the masses of people around them, and our chief aim should be to assist them to habits of thought and of thought expression as similar as possible to those of intelligent hearing persons. It is reasonable in theory and well proved by experience that this may be best accomplished by the use of speech as the instrument of thought. When this *is* accomplished, and only then, will they be brought into close intercourse with the world of hearing persons around them; then only will they cease to be a community in the midst of, but apart from, their fellow-men. It is a law of mind as well as of matter that like produces like, and identity of form and mode of thought are necessary to identity of expression.

Admitting that they are not mentally deficient, we must concede to the deaf the same *capacity* to understand spoken language that hearing persons have, and we would at an early age begin its cultivation and development by teaching them to depend upon spoken language as the medium through which they are to gain knowledge from others, and at a somewhat later period, that through which others may gain from them.

In teaching lip-reading we may follow in part the natural method. By which is meant that we may make the aids used to assist the deaf child to a comprehension of spoken words, as

symbols for ideas as similar as possible to those used for the same purpose with the hearing child. Constant hearing of speech being the chief requisite to acquisition of language by the hearing child, constant *seeing* of simple spoken language should be the bone and sinew, nay more, the very heart's blood itself of our language teaching to the deaf. But we should never lose sight of the fact that with our pupils nature has not done her perfect work and that science must be called to our aid if we would supply to any extent her deficiencies.

The following outline is of the work in lip-reading done with a class of ten pupils formed in the Pennsylvania Institution on the 4th of last October. The pupils ranged from six to eight years of age; six were of average mental capacity, two were above, and two below. All were born deaf.

Their teacher, convinced by years of observation that young deaf children are almost sure to form habits of incorrect speech when allowed to talk before they have learned the exact positions which must be taken, and the actions performed, by the organs used in forming the various sounds of our language, decided to separate lip-reading from the closely related subject of speech itself, and to give an understanding of considerable spoken language before speech should be entered upon. Their little measures should be filled before the drawing off begins. At the same time she hoped to give them an exact understanding of the positions which must be taken by the lips, tongue, etc., in forming the elementary sounds and ability to combine them smoothly; and to do considerable voice training, so that when speech began, naturalness or spontaneity might not be sacrificed to intelligibility. Each sound has its own exact position and action, and approximation to that position will produce only an approximation to the sound desired.

The little hearing child glides unconsciously from baby talk to correct speech, following its natural guide—the hearing—but with the deaf child sight must be well directed indeed, to accomplish all that eye and ear together may do; and every time a word is uttered with voice or vocal organs wrongly placed, incorrect habit is deepened and strengthened. Nowhere is the saying more applicable than here, that an ounce of prevention is worth a pound of cure. Wise are they who grasp the limitations as well as the possibilities of our work!

From the first hour, little commands were given and the relation shown between the word spoken and the act performed. Closely following came the names of a few toys and familiar objects, and then short statements, the children being led always to look for the meaning of the word or sentence before their attention was directed to the elements which comprised it. They soon grasped the fact that everything they could see and everything they could do had a word to name it, and many and varied were the objects daily presented to the teacher with an expression of face or motion of hand which plainly said, "what?"

When they realized that certain sequences of action of the organs of speech are used to represent certain ideas, the first step on the road to lip-reading was taken. They had found out what they were to look for, but had still to learn the exceedingly difficult how. From the first, careful and systematic sight-training was given, for they must learn to distinguish with but little conscious effort between the many perplexing similarities of position that our language presents.

Development of intellectual power goes hand in hand, we are told, with development of sensitiveness of sight; and that time spent in cultivating the power of observation and its kindred faculties of mind would bear abundant fruit was never doubted.

But you are slow, cries the hasty critic. Why linger over sight-training and all this nonsense when language may be more rapidly given through the manual alphabet, or writing? Make haste to language, language, and let lip-reading come later.

Oh, wise and astute observer! As well urge our children to mount a ladder, and when they reach the top call them down in order to send them up another and higher one. Would time be lost, or labor increased, by sending them up the second one first?

A physician was once called upon to attend a boy who was violently ill. No cause could be ascertained for the child's sufferings till one of his companions brought word that he had eaten a quantity of green apples. Relieved to have found some explanation of her child's illness the mother exclaimed, "Then it's the apples that have done it, doctor!" Shaking his head meditatively the learned man replied: "Madam it's not the fault

of the apples; they were very well in their place, and the boy very well in his; it's the *combination.*"

Not until the children could readily understand more than two hundred words when spoken in sentences of simple construction, could give the sounds of almost all the elements, singly and in syllabic combinations, and had learned to form the letters with their pencils, was speech really begun. As they learned the sounds they were taught to write them, but up to this time no significance was attached to writing.

Sometime before this, however, words and phrases constantly used by the teacher and thoroughly understood by the pupils, were unconsciously reproduced by them when occasion arose. Approximations to, "I am sorry," "stop," "sit down," and names of teachers and officers were heard. Not daring to discourage speech so spontaneous, and, on the other hand dreading the formation of incorrect habits, they were allowed to speak only *without voice*, and efforts were redoubled to keep them so busy and interested in the exercises that made up the school programme that they should feel but little need to do other than receive.

Having a thorough understanding of the language they wanted to use, and considerable control of the organs of speech, when the time came for talking, but little encouragement was needed. They were eager to talk and write, and were delighted with each new attainment.

The teacher was fully persuaded by the end of the year that by giving an understanding of considerable language (through lip-reading alone) before speech is encouraged that not only lip-reading, but speech may be made second nature to the deaf child.

SPEECH-READING

BY

MISS MABEL ELLERY ADAMS

OF THE

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BOSTON, MASS.

SPEECH-READING.

It is not very easy to talk about speech-reading without talking about speech as well; when we begin to talk about speech, it is hard not to include language, and by the time language is reached the whole subject of the education of the deaf is upon the *tapis* and the opportunity for discussion unlimited. So far as it is possible, with no sacrifice to intelligibility, methods of teaching other topics than that under consideration will be avoided.

Speech-reading comes before speech, with deaf children, naturally, exactly as speech-hearing comes before speech with hearing children. If every mother would take as much pains to make her deaf child look at her lips, and understand their movements, as most good mothers take in teaching their hearing children to talk, and later, to read, we should have fewer children brought to us with no accurate means of communication between them and their parents.

The *habit* of speech-reading is the first and most important acquirement to be desired for a deaf child. If, when he wants to know something, whether he has language wherewith to ask his question or no, he looks at his companion's mouth, and nowhere else, for his answer, there is a sure foundation laid for that child's success in speech and speech-reading. When, as one little deaf boy of my acquaintance does, a child gives his mamma's chin a preliminary upward push, to afford himself a better view of her mouth, as he settles himself for his good-night love and talk, there is not only the foundation laid, but the work of building is going on, quickened by enjoyment.

This is not theory, it is a statement of known facts observed in the cases of three deaf children. They have completed a year in school now, but I want to spend a little time in speaking of what they did while they were yet in their own homes.

Number one, then, became deaf when he was an infant, from the Grippe. His mother, when she found her boy was

deaf, acting under competent advice, continued to talk to him just as she did to her other children. She was a busy woman, but she found time to *say* everything that she had to say. If she wanted the baby's clothes from up-stairs she would say, "so and so, go up-stairs and get the baby's clothes." The first time she went up with him herself and showed him what she wanted, and ever afterward he knew that sentence upon her lips. If his eyes wandered around the room in search of the cat she said, "Pussy is under the sofa, look under the sofa," and then she got up and looked under the sofa with him, and another phrase was added to his vocabulary of understood words.

There is no need to multiply instances of the sentences and phrases which this mother taught her boy to understand, these examples should be sufficient to show the sort of help she gave him. The boy himself, when he wanted anything, or when he wanted to call some one's attention to anything, always took his mother or the individual desired by the hand or the dress, led them to the spot where by ocular demonstration he could make known his thoughts and ——— put his hand to his throat and made a babbling noise ə]ə]ə]ə]ə]. He had learned to do this from an articulation teacher who taught him to give voice during a visit at his home. This bit is a digression, by the way, from speech-reading, but I want to show by it, that this three years old baby knew that other people communicated their thoughts concerning what they saw with their eyes by means of movements of the lips, and he tried his little best to do the same.

It may be said by many that most mothers do not have time to go with a deaf child upstairs and downstairs in order to teach him the meaning of phrase after phrase, or to get up and follow him from room to room, to see what idea he is trying to express by his long babbling story told in words of one syllable. Perhaps they do not, but I doubt if many mothers are any busier than this one, who is the head of a great farm-household and often without help for days or weeks. *She took* the time which was to benefit her deaf boy.

This boy when he came to school had no word of spoken language, but the first day the teacher gathered the beginning class about her he looked up at her mouth to see what she had to say in this strange new world that he had entered.

Every toy which he found he brought to his teacher and held up looking at her lips to see if there was some corresponding motion to be seen there. This little one is no brighter than others of his class but I think his habit of *expecting* speech is certainly stronger and better founded than that of his classmates to whom this method of communication was new when they entered school.

Now, number two. This little boy was born deaf. His parents, however, did not discover the defect until he was twenty-two months old, so up to that time, of course, he was talked to with the same persistency used with hearing children. This child belonged to a wealthy family so, when he was a little over two a teacher was procured whose business it was to make him grow into the knowledge that speech is the natural means of communication among human beings in this world. I do not know the particulars of the year's work, but I know that the baby was constantly talked to, while he was being dressed, while he ate his meals, while his teacher wheeled him about in his baby carriage, speech and speech only was shown to him. Every member of the family, children and all, talked to his eyes, just as they would have talked to his ears had those organs been able to perform their normal duty. Then for a year this child had no regular instruction, but was still persistently talked to, and then, when he was four years and four months old an articulation teacher came to him who taught him six hundred words in ten months. He *used* those six hundred words. in his home and out of doors, with grown people and with children. He learned to enjoy Nursery Rhymes just as his hearing sisters did, only that instead of learning the whole rhyme, too great a tax for the baby mind, he learned to watch his mamma's lips and put in the important word which she would suddenly wait for like this, "Little boy ———" "blue." "Come blow your ———" "horn." "The sheep's in the ———" "meadow." "The cow's in ———" "sweet corn." He learned ever so many rhymes in this way and would demand them if they were not forthcoming "Where 'mouse ran up clock?'" "Where 'this little pig?'"

He used neither sentences nor pronouns to any great extent that first year, but always appeared to understand them when used by others.

When Christmas was near his teacher told him, and when I say *told*, I mean told; I do not mean indicated to him by gestures, showed him pictures, or anything else but just what the word implies, *told* him about the approaching festival, and among other things told him what presents his papa and mamma were intending to give to each child. He was intensely interested, and when his brother and sisters came to play with him after his lesson he gave the whole thing away, told each one plainly what his or her Christmas present was to be. "Nothing very wonderful" you say? Perhaps not, but yet, when you consider that he had been less than four months using speech, for this was in December and in September he had spoken his third word, for he had only learned *two* that first year when he was between two and three, the first teacher spending most of her time talking to him, and anything which could be construed into forcing being avoided, I think that the facts of his having understood from his teacher's lips the story of the approaching Christmas, of his having comprehended the idea of the presents and of his having been able to tell the children half an hour afterwards what their presents were to be, show pretty conclusively that that boy's mental development had been carried on by means of speech-reading. No other means of communication had ever been used with him up to the previous September (when writing was first shown to him) and he had used no other means of communicating his thoughts than did the first boy spoken of, namely, making people go and see what he had to show. The child must have understood the speech in order to give back even so little of it voluntarily, as no objects were used in the lesson except a calendar.

This little boy has been a year in school now, attending two hours, or two hours and a half, each day and receiving an hour's private instruction in the afternoon. His intercourse with his family is entirely through speech and speech-reading. His sisters and brothers talk to him as they would did he hear, except that, I think, they are rather more emphatic. He is beginning to use a great many phrases and sentences other than those which he has been taught and which he must have picked up from his speech-reading. If you say to him, "Why, Sweetheart, what makes your finger sore, how did you hurt it?" he will answer, "With a nail, weddy sharp nail." He hurt his knee one day and reported, "Hurt knee on flat wall, not round wall." Some

one had distinguished the copings near his home, months before, as flat walls and round walls.

One day he was told about the great desert, and then, just a week later, he was asked about it and gave the following summary: "The desert is all sand. It is warm in the desert. No water. Many camels."

I fear I have taken too much time already in speaking about a child who of course has had unusual advantages, but his case seems to be relevant to the subject inasmuch as his education has been carried on and his mental development attained so largely through speech and speech-reading.

One more case I want to cite, a more ordinary one. This is a girl, born deaf, the child of parents, of foreign birth, Irish, in fact, who, if they can read and write, certainly cannot do much more. There happened to be a deaf boy, a pupil of our school, living near this girl, and from him the mother obtained some idea of the oral teaching of the deaf. When the little girl was five, her mother brought her to school to visit one day. The child seemed to comprehend at once that these children whom she saw were like herself and she kept putting her finger to her mouth and looking questioningly at her mother. She spent the day, taking in everything with wonder-wide eyes and was allowed to sit a while with one or two classes. I think some one of the teachers must have taught her to give voice or perhaps to make one or two of the easier elements, but am not at all sure. She went away and we did not see her again for over a year, then in April, 1893, she began coming to school regularly. She acquired all the elements in a wonderfully short time and was able to take part in oral lessons with children who were far beyond her in written work. She was not by any means abnormally bright, but her mother reported that from the day she had visited the school the year before the idea of spoken language had seemed to come to her and she had begun to watch people's lips, soon learning to read common phrases and words from them. I wish I could give you the story in the mother's own words, it was pathetically archaic, but such things lose their beauty in their repetition.

Perhaps you think that too much time has been spent in speaking of a part of the subject of speech-reading which has nothing to do with school, but as all our children wherever and however they are educated, must begin and end their lives in their own

homes, it seems as though a little time devoted to the consideration of the most impressible period of their lives is not amiss.

We come now to the consideration of speech-reading in connection with the younger children in school, and I must say I approach the subject with fear and trembling, because nothing I shall say will be in the least new, and it may very well be that it may not even have the virtue of being valuable if old.

For the first few years the speech-reading which a child is able to comprehend comprises a good deal more language than he is able to give back by means of his own speech. This is as it should be. Have we not every one of us little hearing friends who, sitting in a corner while mamma entertains visitors, drink in every word of the conversation of their elders eagerly, and then, running out to join their playmates, repeat the said conversation, making sure of the important facts, but telling in a hundred words what mamma and the ladies have been a half-hour in the saying?

It would not be fair then to say that deaf children should be able to say everything which they understand, but we may lay down as a safe rule, perhaps, that they should most certainly be able to understand on the lips of others everything which they themselves can say. So far, their speech and speech-reading should correspond.

The babies in our school, as in most other schools, probably, know how to obey numerous spoken directions while they are yet learning to speak their very first words, if they are being taught by the word-method, or acquiring their elements, if the element-method is used.

The children in the primary department, in the classes above the lowest, have this year given twenty-five minutes a day to systematic lip-reading in the following manner: The first thirty-five minutes of the day were devoted to articulation and chart-drill. We used Miss Fuller's charts which contain first the finals, then the initials, and last the vowels. On Monday morning a consonant or combination of consonants was given to the teachers by the principal which was to be used as an initial with all vowels and all finals during the week. Let us suppose the initial to be *k*. The first fifteen minutes of the Monday morning period, more time perhaps with younger or backward classes, less with older or brighter ones, was spent in making sure of the

initial itself. Perhaps there may be some fortunate teachers here from schools where all the children are always sure of everything which they have ever been taught, but perhaps off in some corner, or back by the door is at least one weary mortal who sometimes is obliged to take a little time to make sure of things, have they been taught never so thoroughly.

The initial of the week made sure of, then, the drill proceeded, the children going rapidly through the combinations, using the given initial and all vowels with first one final and then another, as kŭt, kăt, kĭt, kĕt, kĭt, kāt, kĕt, etc. This part of the work was rapid, and all sorts of devices were used to make the children interested in order that they might acquire fluency. Sometimes they put stress upon every third combination, sometimes upon every fifth, sometimes upon every other one, sometimes every other one was either high or low; but this was articulation, not speech-reading, so it must be left.

At twenty-five minutes of ten the speech-reading part of the lesson began. Of course this lesson differed greatly in different classes as to quantity and degree, but the same general plan was observed in all. The teacher gave and the children read from her lips and repeated, all the combinations of the preceding articulation lesson which were English syllables. Un-English syllables were avoided, simply because it was thought that quite enough exercise could be obtained by using the English ones. As the teacher gave a syllable or word the children repeated it and one child pointed to the elements which would form it upon the chart. Then it was written upon the blackboard, by a child, if the spelling came under one of the general rules, by the teacher if the spelling were difficult. With the younger children only the monosyllables and the common words of two or occasionally three syllables were used, but with the older classes all sorts of words were utilized, proper names, which they would find later in their history or geography, words in common use which are difficult for deaf children to pronounce, names of animals and plants and flowers, and in short any word which contained the desired combination as one of its syllables. From ten to fifteen minutes were given to this speech-reading drill, an explanation of the meaning of the words being given where it was thought desirable. (Each teacher used her own judgment in the matter.) Then for five or ten minutes the teachers gave sentences which embodied some of the words upon the blackboard. Sometimes

it would happen that some of the children were familiar with many of the words and then they would volunteer sentences and the speech-reading would be from a pupil's lips instead of a teacher's. These sentences were also written upon the board under the words and the last five minutes of the lesson-time were spent by the children in copying the words and sentences into their speech-reading books. It may be observed in passing, that we have tried in our school this year to have some written work to be carried home at the end of the year, which should represent every sort of oral work in which the children had participated. One other exercise formed a part of these speech-reading lessons. Sometimes it would happen that the initial of the week in combination with the vowels and the particular finals of the day did not result in many English words or syllables. As a consequence, while these un-English combinations were all right for the articulation drill, the material for speech-reading was scanty. On such days the teachers were directed to spend the time upon words having similar appearances in the mouth. A list of such words prepared by the principal was furnished and some time each week was given to such work as the following:—

If ē were the vowel under consideration the teacher said *me* and the children wrote upon the blackboard everything which has that appearance in the mouth, *me, pea, be,* if they omitted any the teacher supplied the omission, then she went on to mean, meat, mead, peat, beet, bead, bean. The object of this exercise was to acquaint the children with the fact that many appearances in the mouth are susceptible of more than one interpretation, and that a good speech-reader must know the possibilities in order that he may select the probabilities. When a number of these groups of words having the same appearance in the mouth had been placed upon the board the teacher gave sentences or told little stories introducing certain of these words and the children repeated the sentences aloud, then wrote them, using their wits and cultivating their sense of discrimination in deciding which word of a group would make sense in the sentence. This work was found to sensibly aid the lip-reading in the other regular lessons of the school. At first it was greatly feared that confusion would be engendered in the children's minds by an exercise which admitted of more than one correct answer to a problem, if I may use that expression, but no such harm was found to come; considering the possible

and then discarding the improbable, soon becoming a habit, and a manifestly absurd word in a sentence, causing as much mirth as it would if heard in the same connection by a hearing child. These two exercises must not be considered to comprise all the work in speech-reading attempted in the Horace Mann School, as I said above, they represent the general plan of the work for twenty-five minutes daily in the Primary Department.

Once a week a dictation lesson is given to every class but the youngest, usually a summary of facts learned in the Nature lessons, but couched in different language from that used on the day the lessons were given.

Once a week, in connection with the reading, it has been a custom for one teacher to tell the classes something which was new to them and sure to be interesting, even if it seemed a little beyond their grasp. They were allowed to ask all the questions they liked on the subject without being too much hampered as to the form of their questions and when the interest lagged before the half hour had expired, which was seldom however, the matter was abruptly dropped. The next day the lesson was given again in the form of a printed reading lesson on the blackboard, and they greatly enjoyed recognizing the printed form of words which the day before were new to them on the lips.

Besides these lessons which have been described, every lesson from nine o'clock until two is more or less a lesson in speech-reading, but this you know as well as I.

Let me thank you for your attention and hope that your patience is not exhausted. Your courtesy is unlimited.

VI.7052

AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF.

Fourth Summer Meeting,

CHAUTAUQUA, N. Y., JULY, 1894.

[PROCEEDINGS ISSUED IN SECTIONS.]

REPORTS FROM ABROAD

BY

THE HON. JOHN HITZ,

AND

ORAL METHOD IN GERMAN SCHOOLS

BY

MISS J. S. RUSSELL.

ROCHESTER:
WESTERN NEW YORK INSTITUTION FOR DEAF-MUTES.
1894.

HARVARD COLLEGE
JUN 25 1897
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REPORTS FROM ABROAD

BY

THE HON. JOHN HITZ.

REPORTS FROM ABROAD.

Among the most potent of factors contributing to the steady improvement of the means resorted to for the education of the deaf is the individual and collective experience of those immediately engaged in the work presented in a form for ready comparison.

The greater the range of experience collected from reliable sources, the more helpful will the labors of others prove to us in our work. Especially is this the case in the education of the deaf where methods so diverse are employed and teachers of exceptional abilities are required in order to attain the common end in view. The field of enlightened effort now extends to every continent, but it is in Europe and America where the most fruitful thought and labor have been given to the subject. I do not propose on this occasion to give my individual views upon what has been achieved and is being done in the larger centers of population in Europe, but shall present to you brief monographs from acknowledged authorities in the several localities as to the character and condition of the instruction of the deaf, leaving you to sum up for yourselves the aggregate of results attained. With this view I submit the following papers of recent date prepared at the instance of the Volta Bureau, presenting a brief review of the present condition of the education of the deaf as it actually exists in the countries named, viz.:—

Italy, by Prof. G. Ferreri, V. Dir. of the Siena Institution.

France, by Prof. A. Belanger, of the National Institution in Paris.

Germany, by Prof. F. W. Reuschert, Director of the Strassbourg School.

Great Britain, by Prof. Wm. Van Praagh, Director Teachers' Training College, London.

Denmark, Sweden, Norway, Finland, by the author and statistician, Mr. Lars A. Havstad, a graduate of the High School for the Deaf in Christiania, Norway.

Australia, by Samuel Johnson, Superintendent of the South Australian Institution, Adélaide.

ITALY.

GENERAL OUTLOOK.

The hopes of the Itailan educators of the deaf revived by the Congress of Genoa (September, 1892), proved utterly delusive in the year 1893. This year began with faith that the permanent National Committee selected at the Congress of Genoa would give new impulse to the diffusion of knowledge relating to the education of the deaf, and that the Government would take the interests of the deaf more largely to heart. But the Committee gave no sign of life, and the Government, confronted, as it was with a most distressing financial situation through its Minister of Public Instruction, declared that "The State had done enough for the deaf" (Parliamentary sitting of June 26th).

Besides this, controversies arose in consequence of the Congress named between the more thoughtful and well known educators and certain ill-advised colleagues who for some reasons seemed to forget contemporaneous history and labored to disturb the concord heretofore existing among Italian instructors of the deaf by throwing into their midst the deleterious seeds of political factions.

A host of small things! But little energy on the part of the Committee who had received the strongest attestations of esteem from their colleagues. But little solicitude on the part of the State. Trifling disputes of no scientific value and altogether too personal. Amidst so many small things, however, two great factors remained: faith in the oral method, and love for the deaf. These went hand in hand and proved efficacious incentives to progress in the way of didactic and pedagogic reforms, although, for various reasons, the directors of certain institutions delayed somewhat in following modern movements of scientific progress. (Pavia, Genoa, Milan, Turin, Naples.) Furthermore, it can be said, new spirit was imparted to private enterprise, as evidenced by the opening of two new schools for the deaf, viz: in Alessandria through the efforts of Father Strocca, and in Bari through those of Father Swaldone.

Method.—The oral method generally prevails, the manual only in exceptional instances, in certain schools for the deaf. It is noticeable that instructors for the manual method are no longer being trained.

Of 50 institutions for the deaf existing in Italy, in 45 the sole instruction is by the oral method, in the other five, signs are used only in exceptional cases, perhaps because the schools have no instructors for this special purpose.

Teachers.—The instructors who are legally qualified to teach, all, without exception, use the oral method, and at the normal examinations for 1893 (which took place in the schools at Milan and Siena) twelve were declared qualified to teach the oral method.

Publications.—"The Education of the Deaf-Mute" ("*L'Educazione dei Sordomuti*"), a periodical published in Siena by the Royal Institute Pendola, alone remains to sustain the cause of Italian deaf-mutes, because the "Deaf-Mute" ("*il Sordomuto*") ceased its publication in January, 1893. The remaining journal continues to enjoy increasing favor among the thoughtful and learned, and takes an important part in the discussion of problems of pedagogy, illustrates the practical phases of teaching by the oral method and presents to its readers the progress of the art in other countries. It also gives attention to the development of special hygienic studies for the deaf prevalent among the different nations.

In addition to minor publications of a purely local character issued by certain institutions, there were published in the year 1893 the following works:—

"Exercises of pulmonary gymnastics and emission of the voice for purposes of articulation, modulation, and pronunciation, adopted by the institution for the deaf in Bergamo," being a posthumous work by Father Guiseppe Ghislandi.

"The Education of the deaf-mute in Italy, historical and statistical notes with a general catalogue of the Italian publications relative to the deaf."

Report of G. Ferreri to the World's Congress at Chicago.

"Report of proceedings of the Second National Congress of the Educators of the Deaf, held in Genoa from the 1st to the 6th September, 1892."

"The condition of the Italian Deaf-Mute and the legal statutes regarding studies." Ernesto Scuri.

"Dissertation upon pronunciation" by G. C. Amman. First Italian translation by Victor Banchi.

G. FERRERI,
V. Direttore del. R. Istituto Pendola pei Sordomuti, Siena.

FRANCE.

Public instruction of the deaf was inaugurated in France by the Abbe L' Epee in 1760, the sign language being used at first. Bebian simplified the methods employed and Valade-Gabel modified, perfected and rendered more permanent the system of instruction. Up to 1879 the sign language, writing and articulation were used in various ways in the instruction of the deaf in France.

Inspector-General Claveau introduced the oral method into the National Institute for Deaf-Mutes in Bordeaux, into the National School for Deaf-Mutes in Paris; and, finally, after the Congress held in Milan in 1880, most of the French schools adopted the pure oral method, excluding the sign language altogether. Since then all new pupils, entering schools where the deaf are taught, receive instruction in lip reading and articulation. In 1885 a National Congress brought together in Paris the French instructors interested in this subject, and they discussed the results obtained and the efforts to be made for the future. Since the adoption of the oral method, all efforts have been mainly directed towards adapting this method to whatever may present itself in the line of instruction, rather than any endeavor to inaugurate new methods; moreover, its general use has been effected.

Apart from the experience acquired by teachers in instructing according to this method, it is certain that great improvement upon the ordinary methods of communication with persons afflicted with deafness is noticeable. To commence with: the exercises in articulation and lip reading give aptitude and precision to the organs of speech, and in extreme youth prove so beneficial that infant schools have been organized with a view to give very young children an opportunity prior to entering special institutions set apart for the deaf, to be thus trained. M. Cavé-Esgais, Director of the Institute in Bordeaux, has shown the success of such an effort in the infant school established by him in 1888, and the result would certainly indicate the need of more such schools. The National Institution in Paris has changed its age-limit for admission, so that at present it is from nine to twelve years, and other institutions are endeavoring to make similar arrangements as soon as possible to train young children committed to their care. Lowering the age of admission will also have the advantage of affording the means of instruction to such little children as are kept away from school by the neglect of parents. Of 4,000 children of school age, instruction is only

given to about 3,700. In addition, the constant efforts of the State, of the city, and of individuals tend to augment the number of institutions; thus the Department of the Seine has just opened at Asnieres, near Paris, a large boarding school for children of both sexes. The Higher Council for Public Charities has also voted upon a proposition and report made by M. Leeboy (Deputy), which will establish schools in different sections, including two normal schools for instructors in Paris and Bordeaux.

There is certainly now a possibility of ameliorating the condition of our pupils, and giving them a more perfect education by treating them just as their unafflicted brothers are. We can now so train the organs of deaf-mutes that they cannot only communicate with one another by means of speech, but some few at least, can use their organs of speech as well as persons not afflicted at all.

A few general efforts have been made in the National Institute in Paris, that of Bourg-la-Reine, and in some French day schools, to preserve and utilize the hearing of persons not totally deaf.

The Verrier hearing tube, which has become well known, has been used with success by the Sisters of Calvary at Bourg-la-Reine. It is desirable that teachers should use every effort to instruct deaf-mutes according to the best methods, and it is thought that the future has much in store for such defectives. Of 70 schools with 400 teachers and 3,790 pupils (a few small institutions excepted), nearly all use the oral method.

(Signed) A. BELANGER,

(*Prof. and Libr. at the National Institute in Paris.*)

GERMANY.

With the single exception of the institution for the instruction of the deaf founded by de l'Epee in Paris, the education of the deaf may be said to have attained the first permanent hold in Germany. It has here developed mightily through the animating power of neighborly love; more especially is this the case within the past three score years and ten of the present century now so rapidly drawing to its close. Whilst, at the close of the first twenty years from the date of organizing schools for the deaf, a number of schools were founded in connection with normal training schools, some twenty-five years ago numerous schools came into existence devoid of any connection whatever with our ordinary normal training schools. This resulted eventually in a separation of these earlier

schools from their progenitors, the normal training schools, so that at present all labor independently for development.

Germany at present has 95 schools and educational institutions for the deaf. Of these 48 are day schools (externate), 34 are boarding schools (internate), and 13 are partly day and partly boarding schools (inter-externate). Total number of pupils, 6,400, of which 3,614 are boys and 2,786 are girls, under a corps of 650 teachers, of which number 64 are ladies.

In Northern Germany it appears day schools are more numerous, whereas in Southern and Western Germany boarding schools outnumber day schools. This difference is to be accounted for by the religious predelictions of the two sections; Protestants being in the majority in Northern Germany, whilst in Southern and Western Germany the population is prevailingly Catholic. The mixed, or day and boarding school, is an institution of recent date. During the first few years of their attendance, the pupils of these schools are furnished with board and lodging in the school buildings approximating family life as nearly as possible. Their young lives run here their daily course; they are here trained under the supervision, discipline and linguistic instructions of accomplished teachers of the deaf from early morning till late at night. It is here that war is successfully waged against signs, and it is here that they are rendered capable of freely conversing by speech during the remainder of their attendance at school, in which after the first few years, they become day scholars. This arrangement embodies all desired advantages; and, it would seem, is certainly the school system of the future.

It may be mentioned here that the number of schools existing in Germany at the present time is certainly sufficient to satisfy all demands for admission, even in the event that a law should be enacted rendering it obligatory for all deaf-mutes of school age to attend school. So-called "urgency courses" (*Notstandskurse*) such as of late have been introduced in the Province of Prussia for deaf children of advanced ages, and comprising 2, 3, and 4 year courses, can hardly be called advisable or judicious.

These observations cover the general field of deaf-mute instruction, and we now are brought to the question of the means and methods of instruction. In recent years an embittered contest has been waged in Germany among instructors of the deaf and certain adult deaf as to the greater or less adaptability of the oral or the sign-language methods. Fortunately this contest, in the interest of the instructors of the deaf and of deaf-mute instruction generally,

has waned and lessened in acrimony and fanaticism. The question is being discussed and considered more calmly and practically, devoid of personal predelictions. In some of the larger German institutions for the deaf, pupils have already been classified and separated, a lower standard being exacted for the requirements of intellectually less favored, for instance, in Schleswig, Ratibon, etc. On the other hand, the agitation against the exclusive employment of the oral method, and in favor of the partial use of gestures, and writing, in the instruction of the deaf (as, for instance, has been introduced into Denmark) in Germany so far has nowhere resulted in practical application, although many a pen and much printer's ink has been employed in effecting it.

The position is now assumed by many in Germany that deaf pupils should be separated and classified according to their individual capacities and then requirements exacted of them, greater or less, according to the abilities of each respective scholar. It is, however, proposed to continue as heretofore to teach speech to all the deaf; those of normal capacity exclusively in and by means of speech, the intellectually less favored, however, to be instructed in schools apart by the aid of writing and natural gestures. Nowhere in Germany has a practical carrying out of this idea as yet been attempted. This may be ascribed, on the one hand, to the additional cost involved, and, on the other hand, lies the fact, that in other countries practical results of experience in this direction have been too limited, and instruction is largely a question of practical experience! Assuredly this important problem will have to be solved before long in Germany based upon observations made in other countries and extensive pedagogical study.

In conclusion, I would state that among instructors of the deaf two directions have again been manifesting themselves with regard to the order in which the first speech and language lessons shall follow. The one, or more modern wing, during the first two school years, would have the greatest possible consideration given to the daily life, events and experiences of the pupils; it accords to untrammeled object-teaching the largest portion of time in the entire course of instruction, and commencing with the third school year would have a course of reading separate and apart supplementary to some reader, such as the readers of Kohler and Kruse for the third, fourth, and fifth school year. The other and more conservative wing, immediately following the first articulation exercises, would introduce as the basis for all language teaching a primer followed

by a reader, such a one as Vatter's, for instance, to which all phases of language teaching should converge and so constitute a system of combined, object-and-language-instruction. Both wings number among their adherents prominent men in the profession, and both systems of instruction have proved successful when conducted by qualified teachers. Thus far, however, no general conclusion has been reached as to the superiority of one over the other of these systems.

F. W. REUSCHERT,

Principal of the Strassburg-Neudorf School for the Deaf.

GREAT BRITAIN.

The year 1893 is one which will always stand out conspicuously in the history of deaf-mute education in this country; for, although we cannot record any very striking events, the one great fact we can happily refer to is, that at last Great Britain can no longer be pointed at as the only civilized country in the world, in which the care of the afflicted deaf and blind was entirely left to voluntary effort and private benevolence. After many years of agitation and of importunate application to various Ministers and Parliament, the exertions of the friends of the deaf and dumb have been crowned with success! An act of Parliament has been passed, which came into force on the first of January, 1894, and although we cannot look upon it as the perfect measure which we hoped for, it is still a first step in the right direction. Undoubtedly the Act will be improved upon as time goes on, but still *1893* has marked an era in the instruction of the deaf, for it ends the period of Government inaction. (See Appendix: "The Elementary Education (Blind and Deaf Children) Act, 1893.")

One of the difficulties in making legislative provision for deaf children was the question of maintenance. Formerly the duty of providing for destitute deaf, and blind children rested with the Board of Guardians, which, of course, had the appearance—most obnoxious to them—of branding the parents as recipients of parish relief. By the new Act said power has been transferred to the more appropriate hands of the School Boards.

One cannot at this early stage say anything about the practical working of the Act, for it has only just gone into operation. The only gratifying fact is, the fact that we have now Government

support, which really means a great victory for the cause. Undoubtedly the existing institutions and schools will apply to be certified by the Education Department, and none of them need fear being interfered with, as, with the utmost liberality, the bill makes no stipulation whatever as regards systems pursued, or as between boarding establishments and day schools, the support to be given being perfectly independent of these debatable questions. New schools will undoubtedly be started as occasion arises. The only important point to my mind which this Act has omitted to deal with is a very salient one, *i. e.*, the question of the workers. The deaf will benefit, but how about the teachers? No provision is made for extra payment for our special work. The salaries offered now are totally inadequate to induce good men to join the profession. The salaries offered by some country School Boards are simply absurd, and in this instance a bad example has been set by the leading School Boards in the country. One expects, at least, the same payment accorded to teachers of the hearing. Nay, I maintain that the salaries of the teachers of the deaf should exceed those of the hearing, if one takes into consideration the fact, not only that the work is more arduous, but that a double training is necessary.

As regards methods, the pure oral method is making sure progress. Articulation has already found its entrance into schools where hitherto it has been excluded, and although "speech" may not as yet be used as the exclusive means of conveying instruction, the rising generation of teachers will undoubtedly get a more thorough knowledge and appreciation of the pure oral system and will contribute toward its general adoption.

Adult societies are increasing, and, although they may benefit the adult deaf taught on the manual system, by assisting them to employment, etc., they tend too much to keep the deaf, as a class, apart, and rather to hinder the progress of the pure oral system.

Another point which should be mentioned in connection with the year 1893 is the publication of the Census returns of the deaf and dumb. I am wholly indebted to my esteemed friend, Dr. Buxton, for the following observations and data:--

NUMBER OF THE DEAF AND DUMB IN ENGLAND AND WALES 1851 TO 1891.

	DEAF AND DUMB.	TOTAL POPULATION.	PROPORTION ONE IN
1851	10,314	17,927,609	1,738
1861	12,236	20,066,224	1,640
1871	11,518	22,712,260	1,971
1881	13,295	25,974,439	1,953
1891	29,280	29,002,525	2,043
Deaf and Dumb	14,192		
Deaf only, from childhood	1,523		
Others	13,565		

Here the gradual increase of the whole population and the increase in the number of the deaf are shown side by side for the whole term, 1851 to 1891.

As regards the division of sexes, the total number of 29,280 above given is composed of males 13,947, and females 15,333.

There is no definition of "from childhood" given in the returns, and as a careful observer and judicious critic has said: "If from birth is meant, the figures are enormously below the mark; but if from real childhood they are simply absurd."

(Extract from *Quarterly Review of Deaf-Mute Education*, Vol. III., No. 32, pp. 244, 245 and 246).

Judging from the reports issued by the various institutions, schools and societies, the work has been progressing favorably. Through the liberality of private individuals new school buildings have been erected and are now nearly finished at Derby and Preston in Lancashire. New School Board classes are being opened throughout the country and as regards the association of which I am the Director, as the parent Training College for Teachers on the pure oral system, it rejoices to see the spread of the speech-giving method in all English speaking countries. Whatever one's feelings may be as regards systems, or questions of detail, 1893 will always be looked upon by every true friend of the deaf as a year of happy attainments and most significant departure, and will be remembered with gratitude to the Legislature, that the rights, so urgent, and so long neglected, of the most needy classes of our fellow citizens, have at last been recognized.

WILLIAM VAN PRAAGH,
Director, Training College for Teachers of the Deaf,
11 Fitzroy Sq., London.

DENMARK.

This country, as we all know, possesses laws of many years' standing relating to the education of deaf children and organizing their instruction. All children of school age are received at the oral institution at Fredericia (Jutland), and, while the children not totally deaf or having some little speech, are immediately transferred to the oral school at Nyborg, (Funen) and the feeble-minded to a separate institution at Copenhagen, the remainder are retained at Fredericia and about one-third of them, after a trial lasting one vear, are transferred to the old royal institution at Copenhagen, a

manual school. The children not transferred are at the Fredericia institution formed into two divisions, A (the bright children), and B (the children of average intellect), both taught by the oral method.

During the year 1893 a sharp controversy took place between the manual school of Copenhagen on the one side and the schools of Fredericia and Nyborg on the other, the last named schools wished to limit still more the number of children not taught by speech, while the first named asserted that the oral method had been allowed to extend further than advisable under a school organ ization like that of Denmark. This dispute has caused the founding of an association headed by the principals of Fredericia and Nyborg, aiming to withhold the orally taught deaf from the influence exercised over the graduating pupils by the numerous circle of sign-taught deaf in the Danish metropolis, who have an association of their own. The oral association now edit a periodical named the *Effata*, in order to propagate their views, while the association of the deaf at Copenhagen have for several years had a representative in the press named "*Smaablade for dovstumme.*"

At the close of 1893 the school for the feeble-minded deaf at Copenhagen was discontinued, and its pupils, partly taken home, partly distributed to the other schools for deaf children. The result will be, perhaps, that the general intellectual standard of the children transferred from Fredericia to the manual school at Copenhagen will be somewhat lowered.

The Danish teachers had their salaries considerably increased in 1893.

NORWAY.

A plan of organization was adopted in 1890, according to which all deaf children were to be received into three schools, one at Christiana, one at Trondhjem, and one at Bergen; the last named taking in pupils bi-annually, while the intellectually weak children, after a trial of one year at the original schools, are transferred to a separate,--also oral—school at Hamar. The old (oral) school at Christiania was discontinued in 1893 as determined in 1890, and it was also found necessary to take some steps towards the discontinuance of the Bergen school. Otherwise no new children were received into any of the schools in 1893. In 1890, the Government had estimated that the total number of children would be 480, but now it is thought that they will hardly exceed 400. It must be remembered, however, that the number vaires greatly from year to year.

The arrangements resulting from the dispositions above indicated are strongly opposed by those who assert that schools for deaf children ought to be of the smallest possible size and equally distributed over the country, in order to avoid large gatherings of deaf persons in a few places. Especially will the intention to give one of the large schools a permanent place in the city of Christiania (170,000 inhabitants and increasing at an American rate) meet with opposition, not only for the reasons above stated, but also from fear that life in a large city might exercise a pernicious influence on the moral character of the deaf, six-sevenths of whom are born in the country or in small towns.

A new regulation increasing the salaries of the principals and teachers at the schools for abnormal children was issued in 1893.

SWEDEN.

In 1889 the Swedish legislature passed an act of compulsory education for the deaf similar to the Norwegian Act of 1881 and that of Denmark which dates back to 1817. In the same year the reorganization of the schools was determined and the authorities of late have been occupied in providing new buildings for the newly organized institutions.

While the divergencies of opinions as to methods in cases where the manual method formerly was the preponderating one in schools were adjusted by a compromise, giving the oral method schools two-thirds of the children and the manual method schools one-third, viz.: the intellectually weak children—it appears that the authorities in the places where they are at liberty to do as they please, are inclined to try the application to the oral method in the instruction of all children. In three of the seven districts the schools are to be small ones, while the question of small or large schools in other of the districts caused protracted disputes, terminating, as it seems, by the victory of the system of large schools. In the Gothenburg District, where, by the way, the oral method will probably be the only one followed, the authorities have adopted a segregate system of buildings to accommodate about 200 children, to be erected in the little town of Venersborg at the Venern lake at a cost of about $150,000 (kroner 520,000). On the whole it appears that, when the State takes in hand the education of deaf children, the tendency will in most cases be towards centralization and collecting children into large schools.

FINLAND.

This country was formerly far behind the other three northern States as to deaf-mute education, but in the last two years has stepped to the front in a manner very creditable to the energy and good judgment of her education and her authorities.

The Grand Duke of Finland, Emperor Alexander III., issued, July 30, 1862, an ordinance relating to the education of the deaf and the blind. Amongst other enactments the following may be noticed:—

"In the cities of Knopio and Aabo shall be established oral schools adapted to receive eighty-five or ninety pupils each; the *instruction is to be given in the Finnish language.*

"In the city of Borgaa shall be established a school adapted to receive forty-five or fifty pupils; the *instruction is to be given in the Swedish language.*

"The Finnish schools at Knopio and Aabo shall, after one year's trial, transfer those children who cannot profit by the oral method to the manual school at St. Michel.

"The Swedish school at Borgaa shall, in the like manner, transfer part of its pupils to a school at Jakobstad.

"In order to educate pupils too old to be received in ordinary schools, a Finnish school shall temporarily be established at Jyvoskylo and a Swedish one in connection with the manual school at Jakobstad."

The instruction in all of the schools is given gratuitously. The parents or guardians of the children have only to pay the costs of boarding. The oral schools are all to be both internats and externats, the children being boarded in the schools the *first* two years of their instruction, and boarded out in town, the six last years.

The ordinance also enacts that there shall be certain tests and examinations of the teachers wishing to engage in the instruction of the deaf and of the blind, and stipulates the salaries of the staff (by the way, very liberal ones, even more so than the revised Norwegian and Danish regulations of 1893), and a separate ordinance appoints as Inspector of all the schools for abnormal children Mr. Valter Forsius, formerly a principal of a deaf-mute school.

The rush of children to the schools, after the publication of the ordinance, has been so great that it is feared the accommodations will prove too limited. Although education is not compulsory,

most of the schools have been obliged to refuse admission to a large number of children.

The advent of the new organization marks a significant progress of the oral method, as the manual method until then was the ruling one in Finland, and the oral method for many years was only employed at the institution at Knopio (established 1874). The new Inspector, Mr. Valter Forsius, has largely contributed to this result.

LARS M. HAVSTAD.

In conclusion, I would add that, until recently, few, if any, schools for the deaf in Germany admitted children previous to attaining their seventh year.

Michael Berger, an instructor in the Austrian Israelitish School for the deaf in Vienna, published in 1892 an interesting little treatise entitled: "*Kindergarten und Vorschule fur ertaubte, schwer hörige und taubstumme Kinder*" ("Kindergarten and Subprimary School for hard of hearing, congential and non-congential deaf children") in which he endeavored to show the urgent necessity for such institutions, and gave directions how such children previous to attaining school age might be educated and trained either at home or in an institution.

More recently a society has been organized in Berlin to promote the establishment of kindergartens for the deaf, of which Dr. Flatan, Dr. H. Gutzman and Editor Schmidt, Instructor A. Gutzman, Dr. Liebmann and M. Caro, constitute the Executive Committee. A detailed plan of conducting these schools has been published from which it may be interesting to note that special effort is to be made to develop the perceptive faculties of the children, with a view to promote early in life, ability to read the lips. The speech of the semi-deaf is to be maintained and latent hearing developed, but all direct teaching of speech is to be avoided. Gestures and signs are forbidden. The usual occupations and plays peculiar to kindergartens are to constitute the leading feature of the schools, modified so far as admissible, to serve as a preliminary basis for the instruction to follow, the main object being to develop a healthy condition of the body and mind, stimulate the moral faculties, and inculate disciplinary principles. Teachers for these schools are to have a special course of normal training.

Furthermore, it should be stated that aural methods, partly through the decided success which the late Dr. Carl Renz, of Stuttgart, and the eminent specialist Dr. V. Urbantschitsch, of the University of Vienna, claim to have attained, and the successful application claimed for the Audigene Verriere at the Institution in Bourg

la Reine, France, received a marked impetus. To what extent the progress in this direction will be maintained remains to be seen.

Finally, the embittered controversy which prevailed in certain sections of Europe during the years 1891 and 1892 in regard to modifying the prevailing system of instructing the deaf, seems to have materially subsided during the past year, owing largely, it is claimed by Director E. Walther, of Berlin, to the decided stand taken in the matter by the Prussian educational authorities. As the reports from abroad just read indicate, the year 1893, on the whole, proves to have been favorable to the cause all enlightened instructors of the deaf have at heart.

REPORT FROM AUSTRALIA.

1. NEW SOUTH WALES INSTITUTION FOR THE DEAF AND DUMB. There were 61 pupils in attendance; 35 were instructed by the oral method and 26 by the manual method. Very good progress was made during the year. The Inspectors of the Department of Public Instruction who examined the school concluded their Report thus: "Generally speaking in all subjects of examination, the care and skill of the teachers made themselves manifest. The schools are managed in an excellent manner, and their condition is highly creditable to the Superintendent and his assistants."

This Institution has a department for the Blind. There were 15 blind pupils under instruction in 1893.

2. VICTORIA DEAF AND DUMB INSTITUTION. The Annual Report for 1893 states that: "The school work has been carried on with great energy, and has resulted in very satisfactory progress having been made by the pupils."

The Superintendent was deputed by the Committee to visit the South Australian Institution with the view of comparing the work done in both schools. The number of pupils present in 1893 was 58. Both oral and manual methods were used; 23 were instructed by the former and 35 by the latter. The oral schoolroom has been enlarged and an additional teacher appointed. It was determined that the whole of the teachers should learn the oral method with the view of further extending that method of instruction. Instruction in carpentry was commenced and it was resolved to give the pupils more advanced instruction in drawing.

3. SOUTH AUSTRALIAN DEAF AND DUMB INSTITUTION. This Institution, like that of New South Wales, has a department for the Blind.

The number of pupils under instruction was 40 deaf and 12 blind. Of the deaf pupils 30 were instructed by the oral method and 10 by the manual method. The progress made by the senior oral pupils during the year was very good. It was decided to give deaf youths and girls an advanced education, and they have been provided with a library. Mr. C. C. Bryan, formerly Head Assistant of the Midland Deaf and Dumb Institution England, has been added to the staff.

Industrial training has been introduced. Bootmaking, gardening and elementary carpentry are taught. The building has been enlarged.

It was resolved to give a prolonged trial to new pupils on the Oral System, but at the same time to retain the manual system for those who cannot possibly be educated by the oral method.

4. QUEENSLAND BLIND, DEAF AND DUMB INSTITUTION. This Institution which had been industrial and for adults only, opened departments for the education of blind, and deaf and dumb children in 1893. There were 23 adults in the Institution during the year, 9 blind and 7 deaf-mute children who received instruction by the manual method.

PROGRESS OF THE ORAL METHOD.

In 1883 only about 12 per cent of the deaf-mutes of Australian Institutions were educated by the oral method while in 1893, 53 per cent were instructed orally.

CONCLUSION.

You will observe that the oral method is gaining ground rapidly here. This gives me great satisfaction as I look upon myself as the pioneer of this method in Australia. When I arrived in Melbourne in 1882, the system was looked upon with little favor. My efforts to introduce it into the Victoria Institution met with opposition by the Committee which led to my withdrawal from the school in 1885. However, I have now the gratification of knowing that the authorities of that Institution are following in my footsteps by extending the system which has already proved such an effectual means of education here.

I visited the Melbourne Institution last June and at the request of the Committee examined the school and afterwards met the Committee by appointment. Those gentlemen gave me a patient hearing and, I understand, have introduced important reforms.

SAMUEL JOHNSON,
Superintendent South Australian Institution.

APPENDIX.

CHAPTER XLII.

An Act to make better Provision for the Elementary Education of Blind and Deaf Children in England and Wales.

[12th September, 1893.]

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same as follows:—

1.—(1.) The efficient elementary instruction which under the Elementary Education Act, 1876, a parent must cause his child to receive, shall, in the case of a blind or deaf child, be construed as including instruction suitable to such a child, and the fact of a child being blind or deaf shall not of itself, except in the case of a deaf child under seven years of age, be a reasonable excuse for not causing the child to attend school, or for neglecting to provide efficient elementary instruction for the child.

(2.) In the case of a blind or deaf child, the fact that there is not within any particular distance from the residence of the child any public elementary school which the child can attend shall not of itself be a reasonable excuse for not causing the child to attend school, or for neglecting to provide efficient elementary instruction for the child.

2.—(1.) It shall be the duty of every school authority, as defined by this Act, to enable blind and deaf children resident in their district, for whose elementary education efficient and suitable provision is not otherwise made, to obtain such education in some school for the time being certified by the Education Department as suitable for providing such education, and for that purpose either to establish or acquire and to maintain a school so certified, or to contribute, on such terms and to such extent as may be approved by the Education Department, towards the establishment or enlargement, alteration, and maintenance of a school so certified, or towards any of these purposes, and, where necessary or expedient, to make arrangements, subject to regulations of the Education Department, for boarding out any blind or deaf child in a home conveniently near to the certified school where the child is receiving elementary education.

(2.) Provided that the duty of a school authority under this section shall not extend to children who are—

(*a*) idiots or imbeciles; or

(*b*) resident in a workhouse or in any institution to which they have been sent by a board or guardians from a workhouse; or

(*c*) boarded out by guardians.

(3.) Where a school authority contributes under this section to the establishment, enlargement, or alteration of a certified school maintained by another authority, the terms approved by the Education Department shall include security for repayment of the value of the contribution, in the event of the school ceasing to be certified.

3. The terms of contribution approved by the Education Department may include provision for representation of the contributing school authority on the governing body

of the school to which it contributes, in cases where such representation appears to the Education Department to be practicable and expedient.

4. The school authority for the purposes of this Act shall be—

(*a*) for an area under a school board, the school board;

(*b*) for an area not under a school board, any district council established for the local government of the district comprising this area under an Act of the present or any future session of Parliament, acting through a committee of that council appointed for educational purposes, and until such a council is established, the board of guardians, or borough council or urban sanitary authority, appointing a school attendance committee for the area, acting through that committee.

5.—(1.) For the performance of their duties under this Act a school authority may, without prejudice to any other purposes, exercise the like powers as may be exercised by a school board for the provision of school accommodation for their district, and the consent of the Education Department to the exercise of the power of borrowing for the purposes of this Act may be given in any case in which the exercise of that power appears to the Department expedient.

(2.) The expenses of a school authority under this Act shall be paid out of the fund applicable to their general expenses, or where the school authority are a board of guardians, out of a fund to be raised out of the poor rate of the parishes for which the school attendance committee of the board act, according to the rateable value of each parish.

(3.) Two or more school authorities may combine for the performance of their duties under this Act, and, subject to the provisions of this section as to expenses, section fifty-two of the Elementary Education Act, 1870, shall apply in the case of any such combination as if each school authority were a school board, and the enactments relating to the audit of school board accounts shall apply as if any joint body of managers appointed in pursuance of this sub-section were a school board.

(4.) The Public Works Loan Commissioners may, on the recommendation of the Education Department, lend any money required for the purposes of this Act by a school authority on the security of the fund applicable to the expenses of this Act, and every such loan shall be repaid within a period not exceeding fifty years, and shall bear such rate of interest, not less than three and a half per cent. per annum, as the Treasury may authorize as being in their opinion sufficient to enable the loan to be made without loss to the Exchequer.

6. If the Education Department are satisfied, after such inquiry and such notice to a school authority or to a committee of the authority as they think expedient, that the school authority or a committee of the authority have failed to perform their duty under this Act, the Education Department may either—

(1.) proceed in manner directed by section twenty-seven of the Elementary Education Act, 1876; or

(2.) order that the school authority pay to any certified school specified in the order, towards the expenses of any particular child at the school, such annual or other sum as may be fixed by order of the Department, and any sum so ordered to be paid shall be a debt to the school from the school authority.

7.—(1.) A school shall not be certified by the Education Department as suitable for providing elementary education for blind or deaf children—

(*a*) if it is conducted for private profit; nor

(*b*) unless it is either managed by a school authority, or the annual expenses of its maintenance are, to the extent of not less than one third, defrayed out of sources other than local rates, or moneys provided by Parliament, and are audited and published in accordance with regulations of the Education Department; nor

(*c*) unless it is open at all times to the inspection of Her Majesty's Inspectors of Schools and of any visitors authorized by any school authority sending children

to the school; nor

(*d*) unless the requirements of this Act are complied with in the case of the school.

(2.) Every school so certified (in this Act referred to as a certified school) shall be deemed to be a certified efficient school within the meaning of the Elementary Education Act, 1876, and for the purposes of section eleven of that Act may, in the case of a blind or deaf child, be treated as if it were a public elementary school.

(3.) A certificate granted in pursuance of this section shall be annual.

(4.) For the purposes of this section there shall be included in local rates any sum received under this Act by a school authority from a parent and applied towards the general expenses of the school authority.

8.—(1.) If and so far as the school which a child is required in pursuance of this Act to attend is not a public elementary school, it must in all matters relating to the religious instruction and observances of the child, be conducted in accordance with the rules applying to industrial schools, except that references in the Industrial Schools Act, 1866, and the rules made under it, to the Secretary of State shall be construed as references to the Educational Department; and any school authority may provide and maintain for the purpose of this Act a school so conducted.

(2.) Every rule made under this section shall be forthwith laid before both Houses of Parliament.

(3.) In selecting a school under this Act, the school authority shall be guided by the rules laid down in the Industrial Schools Act, 1866, and a child is boarded out in pursuance of this Act, the school authority shall, if possible, arrange for the boarding out being with a person belonging to the religious persuasion of the child's parent.

(4.) Where a child is required in pursuance of this Act, to attend any school, the child shall not be compelled to receive religious instruction contrary to the wishes of the parent, and shall, so far as practicable, have facilities for receiving religious instruction and attending religious service conducted in accordance with the parent's persuasion, which shall be duly registered on the child's admission to the school.

9.—(1.) Where a school authority incur any expense under this Act in respect of any blind or deaf child, the parent of the child shall be liable to contribute towards the expenses of the child such weekly sum, if any, as, regard being had to the provisions of the Elementary Education Act, 1891, may be agreed on between the school authority and the parent, or, if the parties fail to agree, as may, on the application of either party, be settled by a court of summary jurisdiction, and any sum so agreed on or settled may, without prejudice to any other remedy, be recovered by the school authority summarily as a civil debt.

(2.) It shall be the duty of the school authority to enforce any order made under this section, and any sum received by a school authority under this section may be applied by the school authority in aid of their general expenses.

(3.) A court competent to make an order under this section may at any time revoke or vary any order so made.

10.—(1.) The parent of a blind or deaf child shall not, by reason of any payment made under this Act in respect of the child, be deprived of any franchise, right, or privilege, or be subject to any disability or disqualification.

(2.) Payments under this Act shall not be made on condition of a child attending any certified school other than such as may be reasonably selected by the parent, nor refused because the child attends or does not attend any particular certified school.

11. For the purposes of the Elementary Education Acts, 1870 to 1891, a blind or deaf boy or girl shall be deemed to be a child until the age of sixteen years; and the period of compulsory education shall, in the case of such a child, extend to sixteen years, and the attendance of such a child at school may be enforced as if it were re-

quired by by-laws made under the Elementary Education Acts, 1870 to 1891; and any such child shall not, in pursuance of any such by-laws, be entitled to total or partial exemption from the obligation to attend school.

12. Nothing in any Act of Parliament shall prevent the Education Department from giving aid from the parliamentary grant to a certified school in respect of education given to blind or deaf children to such amount and on such conditions as may be directed by or in pursuance of the minutes of the Education Department in force for the time being.

13.—(1.) As from the first day of July one thousand eight hundred and ninety-four so much of any enactment in force at that date as empowers boards of guardians to send blind or deaf children to school shall be repealed, except as to children who are—

(*a*) idiots or imbeciles; or

(*b*) resident in a workhouse or in an institution to which they have been sent by a board of guardians from a workhouse; or

(*c*) boarded out by guardians.

(2.) Provided that, where any blind or deaf child with respect to whom the powers of guardians cease in pursuance of this section is on the first day of July one thousand eight hundred and ninety-four relieved in any institution by a board of guardians, the child shall continue chargeable as if this Act had not passed, until the expiration of six months' notice to be given by the guardians, if they think fit, to the school authority of the district from which the child was sent.

14. The Education Department shall annually lay before both Houses of Parliament a report of their proceeding under this Act during the preceding year, and in that report shall give lists of the schools to which they have granted and refused certificates under this Act during the year, with their reasons for each such refusal

15.—(1.) In this Act—

The expression "blind" means too blind to be able to read the ordinary school books used by children;

The expression "deaf" means too deaf to be taught in a class of hearing children in an elementary school;

The expression "school" includes any institution in which blind or deaf children are boarded or lodged as well as taught, and any establishment for boarding or lodging children taught in a certified school;

The expression "elementary education" may include industrial training whether given in the school which the child attends or not;

The expression "maintenance" includes clothing;

The expression "expenses," when used in relation to a child, includes the expenses of and incidental to the attendance of the child at a school, and of and incidental to the maintenance and boarding out of the child while so attending, and the expenses of conveying the child to or from school;

Other expressions have, unless the contrary intention appears, the same meaning as in the Elementary Education Acts, 1870 to 1891.

(2.) For the purposes of this Act a child resident in a school or boarded out in pursuance of this Act shall be deemed to be resident in the district from which the child is sent.

16. This Act shall not extend to Scotland or Ireland.

17. This Act shall come into operation on the first day of January one thousand eight hundred and ninety-four.

18. This Act may be cited as the Elementary Education (Blind and Deaf Children) Act, 1893, and shall be read with the Elementary Education Acts, 1870 to 1891.

ORAL METHOD IN GERMAN SCHOOLS

BY

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ORAL METHOD IN GERMAN SCHOOLS.

In speaking of the method used in the German Schools for the Deaf, I shall attempt to make no comparisons, but shall merely give a sketch of my personal observations while visiting those schools during this past winter.

The various schools may differ somewhat in their manner of teaching, also in grade of work, but as to Oralism, they are a unit. The one aim is all speech and no signs. To visit these schools and not be favorably impressed would be impossible to one interested in the education of the deaf, whether he be in favor of Oralism or not. After spending a few days in one of the schools I decided to at least try to study the method, if the opportunity to do so could be obtained.

Soon after my arrival in Berlin, I wrote to Herr Director Walther of the *Königliche Taubstummenanstalt* of that city and told him what I desired. Very promptly I received a most cordial invitation not only to spend as much of my time as possible in the school, but also to attend the lectures and recitations of the normal class studying there.

Each teacher gave me a kind welcome and was more than willing to explain anything that I did not understand. They wanted me to learn as much as I could of their method in order to tell those of America of the success of Oralism. Some of them seemed to have rather a limited idea of the work in this country—even thinking that there are no oral schools.

To secure a position as teacher in a school for the deaf in Germany, it is necessary to study for two years in one of the schools and then pass an examination in the work. It is only those that expect to make it their life profession who take it up. It is the exception to see a woman teaching. I saw none, but there were two who completed the normal course this spring and, I think, are now occupying positions.

This normal course consists of lectures on anatomy, theory, and history of work among the deaf with the practical application

of the last two. The lectures on theory are usually given by the superintendent and include all the branches taught in the schools, also instruction as to the care of children. After each one of these lectures, the class usually adjourns to one of the schoolrooms where a test recitation is conducted by one of its members. An outline, which has been previously prepared by the one having charge of the recitation, is first passed around for inspection. The last quarter of the hour is devoted to remarks and criticism by superintendent and class on the recitation, its material and the manner in which it has been conducted. These discussions are always interesting and helpful. Each one has the opportunity of gaining ideas from the others, also profiting by their mistakes. The students, in turn, have charge of these recitations until they have had experience in every grade of work. They are also required to spend a certain length of time in each class, listening and taking notes. The lectures in anatomy are given by one of the University professors. After two years of this practical work, the students are considered well prepared to assume the responsibility of teaching. They sometimes return, after having taught several years, and take an additional course of a year in order to be able to accept the position as superintendent of an institution.

The course in the schools for the instruction of the deaf of Germany is only eight years, therefore nothing but grammar-school work is done. If they desire anything more advanced, the deaf must provide for it themselves.

Quality and not quantity, a moderate amount well learned, is far better than to attempt too much, think the Germans. The deliberation and thoroughness throughout the entire course could not be otherwise than satisfactory and pleasing to anyone interested. The danger of being too ambitious for the pupils and thereby pushing them too much, and that also of working with them, especially the beginners, until they are tired, are carefully guarded against.

Lip-reading and talking begin simultaneously. From the very first the class is encouraged to look at the one reciting, the result of which being, they understand one another quite as well as they do the teacher, and are soon able to notice when mistakes are made.

A strong sympathy between teachers and pupils exists, the latter seeming to realize that to make progress of any kind, exertion on their part is equally if not more important than that on the part of the teachers.

The following sentiment which I read in a publication in the interest of the deaf in Germany is the prevailing one. "The more the deaf can talk and do talk, the less use they have for signs; also they should be talked with from morning until evening." Herr Director Walther in one of his lectures on articulation said "Let every hour throughout the entire course be an articulation hour,—never allow a mistake to pass unnoticed as it will be more difficult to correct it the next time. Everything else must be secondary to speech. Natural signs are used only in the beginning class. In the catalogue of the Berlin school are the following regulations: 'The natural signs as means of communication between teacher and pupil are to be used only with the new pupils when they first enter the school. The teachers should both in school and out exert themselves to encourage talking and making of complete sentences."

GRADES OF WORK.

The first year is devoted entirely to articulation. The sounds are taught very slowly, a new one not being given until those already learned are firmly fixed in the minds of the pupils. One class that I visited spent two weeks on *p, t, k*. *P* was said once, then several times in one breath. The three were given in the same breath, thus making a good breathing exercise. The teacher was very careful that the sounds should have neither too much nor too little breath. Sometimes the teacher took two small slips of paper, one stiff and the other flexible, and placed them in front of his mouth as he pronounced the letter. This showed them exactly how much breath should be used. The vowel sounds are often not touched upon until the class has been in school for several weeks. Our *ä* is the first one, but it is usually preceded by some local exercise, as, the trilling with the lips, during which the teacher moves the chin thus making *ba-ba*. It is claimed that this aids somewhat in preventing the *ä* from being too much in the throat. "*R*" is one of the most difficult letters and is one of the last ones taught. It has both its advantages and disadvantages over that of the English language. When trilled with the tip of the tongue it brings the voice against the teeth, but this can be too much exaggerated. In listening to one of the older pupils talk, I could scarcely hear anything but the rolling *r's*.

With the different sounds, breathing exercises are given, also vocal exercises suitable to the needs of each individual voice. Tongue and lip gymnastics are much used. Among the breathing

exercises was that of filling the lungs with air and making a prolonged 'f' during which the teacher slowly moved his hand along a measure. This created a little rivalry among the pupils and consequently each one made an earnest endeavor to fill his lungs as full of air as possible.

As the vowels are learned, they are combined with consonants. Whenever one of these combinations happens to make a word, it is explained.

In addition to a short recess which is given this class every hour, games both to amuse and instruct the children are made use of. That of ninepins is used in teaching them how to count. To reward each child with as many candies as the number of ninepins he succeeded in knocking down with the ball, providing he made no mistake in counting, proved a good incentive to counting. It was remarkable how quickly they learned to distinguish the difference between four and five, or if one of them took one too many candies. Dice are used in somewhat the same way. I saw no abstract counting in this class. Every number has a name and means something to the children. At the close of this year's work, the pupils have the sounds, combinations, and a limited number of short sentences. As there are no silent letters and every letter always has the same pronunciation, the deaf learning the German language certainly have a wonderful advantage over those learning English.

With the second year, the class is well prepared to begin language. This is taught by means of action work, pictures, stories, and questions. For illustration of action work: A chair is placed before the class, and the following questions are asked by the teacher:—

What is that?

Where is it?

What has it?

How many legs has it?

Such sentences as, "The chair has four legs, but the table has only three," "The chair has four legs and so has the desk." These were for the purpose of teaching how to compare objects both similar and different. "Put the chair by the window, by the door," etc." As each one obeys this command, he describes the action using first person, present tense, and the others second or third person. Following this the past tense was given. The sentences were repeated a number of times to make them sure.

Breathing exercises, phrasing, syllabication, accentuation, and reciting in concert have a prominent place in these exercises.

Several hours every week are spent in free conversation, in which questions are asked to draw out the thoughts of the pupils. For example: A piece of bread is placed on a table before the class. They tell a story which they have previously learned, each one giving a sentence:—

A child cried.

Why? Because he was hungry, and his mother was away. When his mother returned what did he ask her? etc. Then followed a personal conversation with questions. As, "Do you like bread?" "What do you eat on your bread?" "Are you hungry?" One was told to cut the bread and give each one a piece, at the same time he was asked what kind of a knife should be used for such a purpose. This changed the subject to knives and their uses.

The arithmetic of this year is not extensive. Although it may sometimes be done, yet it is not required to use any number greater than twenty.

In the third and fourth years the work broadens. The pupils have a vocabulary and thoughts of their own—language, arithmetic, Bible stories, and mechanical speaking are the regular studies. Many devices are used to increase originality of thought and imagination. The Bible stories are taught from pictures. After placing the picture before the class, the teacher tells them the story, after which it is learned and repeated by them. Pictures especially made for the purpose are often used in the language lessons. Much of the arithmetic is oral; such examples as, 45—17, 36—19 are answered about as soon as the teacher has finished speaking. Although he changed quickly from multiplication to subtraction, division, or addition, he did not succeed in confusing the class. If mistakes were made, they would see them immediately. To teach them to divide twenty by any number, twenty nuts were given to one of them. He was told to divide them between two of the pupils until the supply of nuts was exhausted, then to count how many each one had. He repeated the process, dividing the nuts between three, four, etc. At the close of the hour, each pupil was able to divide 20 by any number without the aid of the nuts.

Pencils, apples, nuts, books, etc., are thought much more practical and helpful than the numerous "arithmetic machines." Only once did I see one of these machines in use.

Geography begins in the fourth year and is continued through out the remainder of the course. It begins with the plan of the institution and is taught by the synthetic method. From the first, maps are expected to be drawn, although they may consist of only a few simple lines. Again we see pictures used. When not possible to procure them, the class are expected to use their imagination.

History is taken up two years later than Geography. The idea of grouping ideas is well carried out. A particularly good illustration of this was in a recitation on one of the crusades. A poem referring to the crusade was recited by one member of the class. Then the countries concerned, the time, rulers, and important events were named.

In Natural History the pupils are taught to think for themselves; to observe everything they see in nature and to draw comparisons. And to see the beauty in nature is not neglected. To take the children for walks in the parks, and to point out the flowers and animals are among the duties of the teachers.

The subject of a recitation was coffee. Grains of coffee were passed around among the class for examination. They were asked what they were. The teacher then told them how coffee grows and at the same time showed them a small branch of a coffee tree. Thus at the end of the hour, by means of questions and a few facts from the teacher, the class could give a full description of coffee, the way in which it grows, and its uses.

Great importance is attached to what we call mental arithmetic. The teacher repeats the example once and expects a careful working and analysis without the aid of a pencil. The price of a book is $2.80. I buy it at a reduction of 20 per cent; how much do I pay for it? This example was worked as promptly as it could have been by a class of pupils who could hear every word spoken. First to be sure, and then quick, is the principle in arithmetic.

The success of lip-reading certainly is well illustrated in these schools. It is not necessary to always face the pupils while talking, as they are able to read from the side of the mouth. Their seats in the schoolroom are often changed for the purpose of cultivating this faculty.

The idea of the whole system is to educate the deaf to be as much like others as possible, and to prepare them to be self-supporting citizens. Each day that I spent in the school, I more fully appreciated the advantage of slow work. The teachers are full of

enthusiasm for their classes. After praising a class to the teacher of the same, I received this reply, "The children are what their teachers make them."

In closing, I shall only say that as to quality of work it would be difficult to surpass the German schools. Having the same object in view, and all striving to reach it by the same path, they form a great body of co-workers who are accomplishing a grand and satisfactory work.